A REMEDIAL PIANO SIGHT-READING SELF-INSTRUCTIONAL PACKAGE FOR INTERMEDIATE PIANO STUDENTS

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OF THE REQUIREMENTS FOR
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2012

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Thesis
entitled

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Pornchananan Suravichai

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A REMEDIAL PIANO SIGHT-READING SELF-INSTRUCTIONAL PACKAGE FOR INTERMEDIATE PIANO STUDENTS

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ABSTRACT

The purposes of the study were to (1) invent *a remedial piano sight-reading self-instructional package for intermediate piano students*, (2) verify the efficiency of this package following the efficiency criterion of 70/70, (3) compare the average results of pre-test and post-test, and 4) explore the students' satisfaction with the package. The sample consisted of 23 intermediate piano students from 7 qualified piano studios, with a duration of 10 weeks. Research instruments were (1) the series of *a remedial piano sight-reading self-instructional package for intermediate piano students*, which consisted of 10 books; (2) a teacher's handbook; and (3) the students' satisfaction questionnaire with Likert's five-point rating scale. The statistics used to analyze the data were descriptive statistics: percentages, means, standard deviations; and inferential statistics: a paired-sample t-test with a significance level of 0.05.

The results of this research were (1) the efficiency of *a remedial piano sight-reading self-instructional package for intermediate piano students* was 82.41/84.63, higher than the standard efficiency 70/70, (2) the average score of the post-test was higher than that of the pre-test at a statistically significant level of 0.05, and (3) the students' satisfaction with a *remedial piano sight-reading self-instructional package for intermediate piano students* was at a high level.

KEY WORDS: SIGHT-READING/ INSTRUCTIONAL PACKAGE/ INTERMEDIATE PIANO STUDENTS

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ชุดซ่อมเสริมทักษะการอ่านโน้ตแรกเห็นด้วยตนเองสำหรับนักเรียนเปียโนชั้นกลาง

A REMEDIAL PIANO SIGHT-READING SELF-INSTRUCTIONAL PACKAGE FOR INTERMEDIATE PIANO STUDENTS

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บทคัดย่อ

การวิจัยเรื่องชุดซ่อมเสริมทักษะการอ่านโน้ตแรกเห็นด้วยตนเองสำหรับนักเรียนเปียโนชั้นกลางมีวัตถุประสงค์เพื่อ (1) สร้างชุดซ่อมเสริมทักษะการอ่านโน้ตแรกเห็นด้วยตนเองสำหรับนักเรียนเปียโนชั้นกลาง (2) ทดสอบประสิทธิภาพตามเกณฑ์ 70/70 (3) เปรียบเทียบผลสัมฤทธิ์ก่อนเรียนและหลังเรียนของผู้เรียน และ (4) ศึกษาความพึงพอใจของนักเรียนต่อชุดซ่อมเสริมทักษะการอ่านโน้ตแรกเห็นด้วยตนเองสำหรับนักเรียนเปียโนชั้นกลาง ซึ่งกลุ่มตัวอย่างในครั้งนี้ได้แก่ นักเรียนเปียโนชั้นกลางจำนวน 23 คนซึ่งได้รับคัดเลือกมาจากสตูดิโอของอาจารย์ 7 ท่าน ภายในระยะเวลา 10 สัปดาห์ เครื่องมือที่ใช้ในการวิจัยในครั้งนี้ ประกอบด้วย (1) ชุดซ่อมเสริมทักษะการอ่านโน้ตแรกเห็นด้วยตนเองสำหรับนักเรียนเปียโนชั้นกลาง จำนวน 10 เล่ม (2) คู่มือครู และ (3) แบบสำรวจความพึงพอใจของนักเรียนต่อชุดซ่อมเสริมทักษะการอ่านโน้ตแรกเห็นด้วยตนเองสำหรับนักเรียนเปียโนชั้นกลางสถิติที่ใช้ในการวิเคราะห์ข้อมูลประกอบด้วย สถิติเชิงพรรณา: ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และสถิติเชิงอนุมาน: PAIR-SAMPLE T-TEST

ผลการวิจัยพบว่า (1) ชุดซ่อมเสริมฯ มีประสิทธิภาพสูงกว่าเกณฑ์ที่กำหนด 70/70 (2) นักเรียนมีผลสัมฤทธิ์มากขึ้นหลังจากใช้ชุดซ่อมเสริมฯอย่างมีนัยสำคัญทางสถิติที่ 0.05 และ (3) ความพึงพอใจของนักเรียนต่อชุดซ่อมเสริมฯโดยรวมอยู่ในระดับมาก

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CHAPTER I
INTRODUCTION

1.1 Significance and problem statement

Among the essential music skills for all musicians such as technique, performance, listening, and improvisation, reading is one of the most important. Language literacy serves as an important skill to enhance one's comprehension ability. Akin to language literacy, sight-reading is a specified component of musical literacy competency. The more literacy competency one has in both language and music, the greater understanding in communication is received.

Sight-reading is an ability to perform music at sight while maintaining a suitable steady tempo, and performing the material without stopping to go back and correct any mistakes. The performer will perform by reading standard western music notation that has not been seen before, showing understanding of musical syntaxes and musical elements (Fry, 1996; Gordon, 2007; Udtaisuk, 2005).

Nowadays, the acquisition of sight-reading skill is still being explored by music educators; they know that music sight-reading requires cognitive process and physical coordination (Kopiez & Lee, 2008; Lehmann & McArthur, 2002; Rayner & Pollatsek, 1997; Udtaisuk, 2005), but several music educators especially music teachers, only explain the sight-reading skill acquisition to their students that it comes from accumulation of repertoires. Without a clear relevant explanation, the students cannot improve their sight-reading skills, or must take a long time to improve the sight-reading skill. As a result, many educators have been striving to find the pedagogical strategies in order to develop the teaching techniques to facilitate the sight-reading teaching (Udtaisuk, 2005). From the past to nowadays, there are a large number of researchers and studies in sight-reading field (Goolsby, 1994; Lehmann & Ericsson, 1996; Sloboda, Clarke, Parncutt, & Raekallio, 1998) whose work can be categorized into three basic categories. (1) cognition/perception, (2) effective factors in sight-reading achievement, and (3) pedagogical approaches (Wristen, 2005).

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An intermediate piano level is a critical level for piano students. A large number of students give up the piano study at this level with several reasons such as technique deficiency and less musical interest (Bastien, 1988). Besides, music reading skills are one of piano students' main deficiencies in many countries (Hardy, 1998) including Thailand (Khamrong, 2002; Tayrattanachai, 2009). Although a number of these three research categories have been presented to public, the problems in piano sight-reading teaching still remain due to a plentiful range of causes (Hardy, 1998). Sight-reading problems in the piano students are linked to reasons, such as, the teachers' attitude towards sight-reading, students' attitude towards sight-reading, students' knowledge integrations, subskills deficiency, teachers' ignorance, method deficiency (Berr, 2008; Dirkse, 2009; Gipson, 2009; Hardy, 1998; Richardson, 2000).

In considering the level of piano sight-reading skills in Thailand, Tayrattanachai stated that Thai students failed in piano sight-reading task in The Trinity College London examination around 70%, whereas, the 30% of students who passed in sight-reading task received an unsatisfied score (Tayrattanachai, 2009). Moreover, in grades 6-8 examinations, students passed on examination by repertoire or rehearsed performance, but failed on sight-reading tasks (Khamrong, 2002). According to the mentioned situations, as a result, Thai students have bad attitude towards sight-reading task (Khamrong, 2002; Tayrattanachai, 2009).

The well-known sight-reading instructional books in Thailand are the Sound at Sight series by Trinity College London, and the Specimen Sight-Reading Tests series by The Associated Board of the Royal Schools of Music. These two methods play an important role in piano education in Thailand because they are directly related with the preparation for international examinations. However, there were several problems in using these books such as the guidance's problems; less or no guidance, not relevant, in foreign language, lack of teaching procedure (Khamrong, 2002; Tayrattanachai, 2009). In summary, these books seem to be more exercise books than teaching method books. They are lack of the obvious classifications of the contents to benefit the students in knowledge integration.

To explain the components of piano sight-reading, Dneya's 2005 Ph.D. dissertation presents a theoretical model of assessing piano sight-reading achievement

by assessing physical Coordination, musical Awareness, musical Potential, and musical Experiences, subsequently referred to as CAPE (Udtaisuk, 2005).

One of the causes of piano sight-reading deficiency, the students' inability to integrate the musical knowledge was mainly focused in this research. Problems in knowledge integration including key, rhythm and beat, dynamic and articulation marking, pitch reading, fingering, as well as piece overview were determined in a form of the table of problems in knowledge integration, as well as served as a main concept in the piano sight-reading remedy (Deutsch, 1950; Gordon, 2007; Lehmann & McArthur, 2002; Richman, 1986; Sloboda, 2005).

After a review of related literature pertaining to texts, researches and studies in sight-reading and piano pedagogy, this proposed thesis is to present *A remedial piano sight-reading self-instructional package for intermediate piano students*, as a means to remedy the students' sight-reading abilities.

1.2 Research objectives

1. To invent *A remedial piano sight-reading self-instructional package for intermediate piano students.*

2. To verify the efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students* following the efficiency criterion of 70/70.

3. To compare the averaged result of pre-test and post-test by using paired-sample t-test.

4. To explore the students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students*.

1.3 Benefits of the study

1. An accomplished *A remedial piano sight-reading self-instructional package for intermediate piano students.*

2. This study can help the intermediate piano students to remedy their own sight-reading skills.

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3. This study can help the intermediate piano students themselves to specify their own specific problems in sight-reading in order to continually develop their sight-reading competency in the future.

1.4 Research hypothesis

1. *A remedial piano sight-reading self-instructional package for intermediate piano students* has the efficiency criterion of 70/70.

2. The assessment results in the post-test are higher than those of the pre-test.

3. The students' satisfaction over *A remedial piano sight-reading self-instructional package for intermediate piano students* is at high level.

1.5 Scope of the study

1. The population in this study is 23 intermediate piano students from 7 studios.

2. The sight-reading exercises in this instructional package are up to four sharps and flats.

3. The sight-reading exercises were divided into ten books. The first book consists of overview theory and supplementary exercises. Other remained books consist of two relative keys in each book.

4. The duration for the experiment of this study was 10 weeks.

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1.6 Conceptual framework

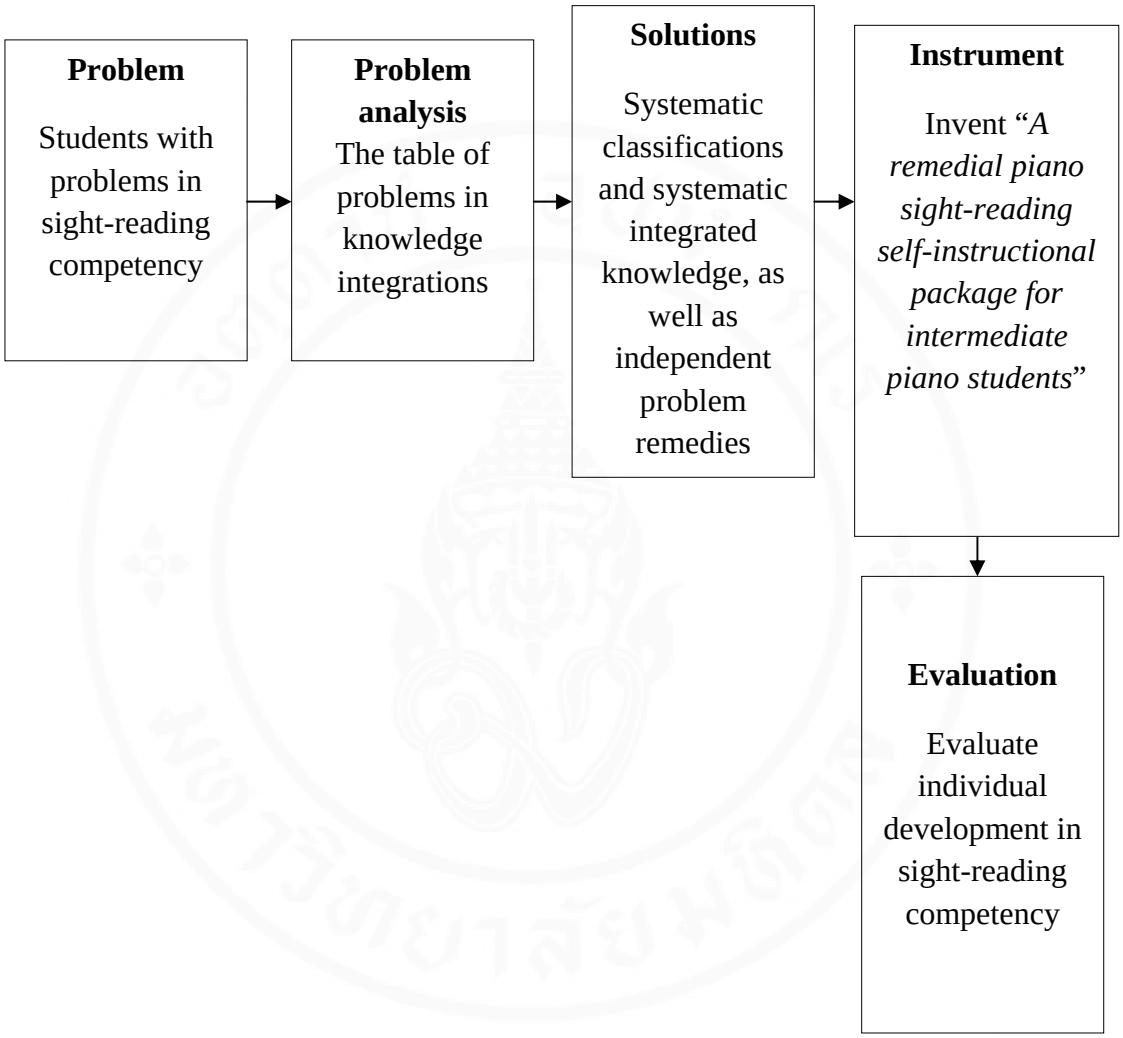

Figure 1.1: Conceptual framework

1.7 Theoretical concept and theoretical approach

A remedial piano sight-reading self-instructional package for intermediate piano students was created based on Udtaisuk's *A Theoretical Model Of Piano Sightplaying Components* (Udtaisuk, 2005).

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The theoretical model as mentioned above was specifically explained to individual's piano sight-reading competency. This model is called CAPE model:

physical Coordination, musical Awareness, musical Potential, and musical Experiences.

Based on this model and a number of literature reviews, the researcher developed the table of problems in knowledge integrations to be a theoretical approach in order to invent the exercise package, as well as to help both teachers and learners to understand the individual's sight-reading problems.

Table 1.1: Problems in knowledge integration

Topic	Problems
Key	Although the students can specify the key or not, they always ignore the sharp or flat sign from the key signature part. Moreover, some students cannot perceive the wrong sense of mistaken key.
Rhythm & Beat	Some problems in the rhythmic pattern reading might come from the misunderstanding in rhythmic pattern or time signature, the inability to perform in a real time, or the inability to keep a steady beat or tempo.
Dynamic and articulation marks	Although they can specify the meaning of dynamic and articulation marks easily, they hardly have the ability to perform these marks at sight-reading time.
Pitch reading and pitch position	Some intermediate piano students still have problems in pitch reading and specifying the pitch position on keyboard.
Fingering	Problem in thinking fingering during sight reading is one of the problem's causes in sight-reading failure. Giving fingering guideline will help the reader who has problem in fingering decision.
Piece overview	One of the problems from a lack of piece overview observation is students will bother the musical continuation by extremely trying to perfect the pieces.

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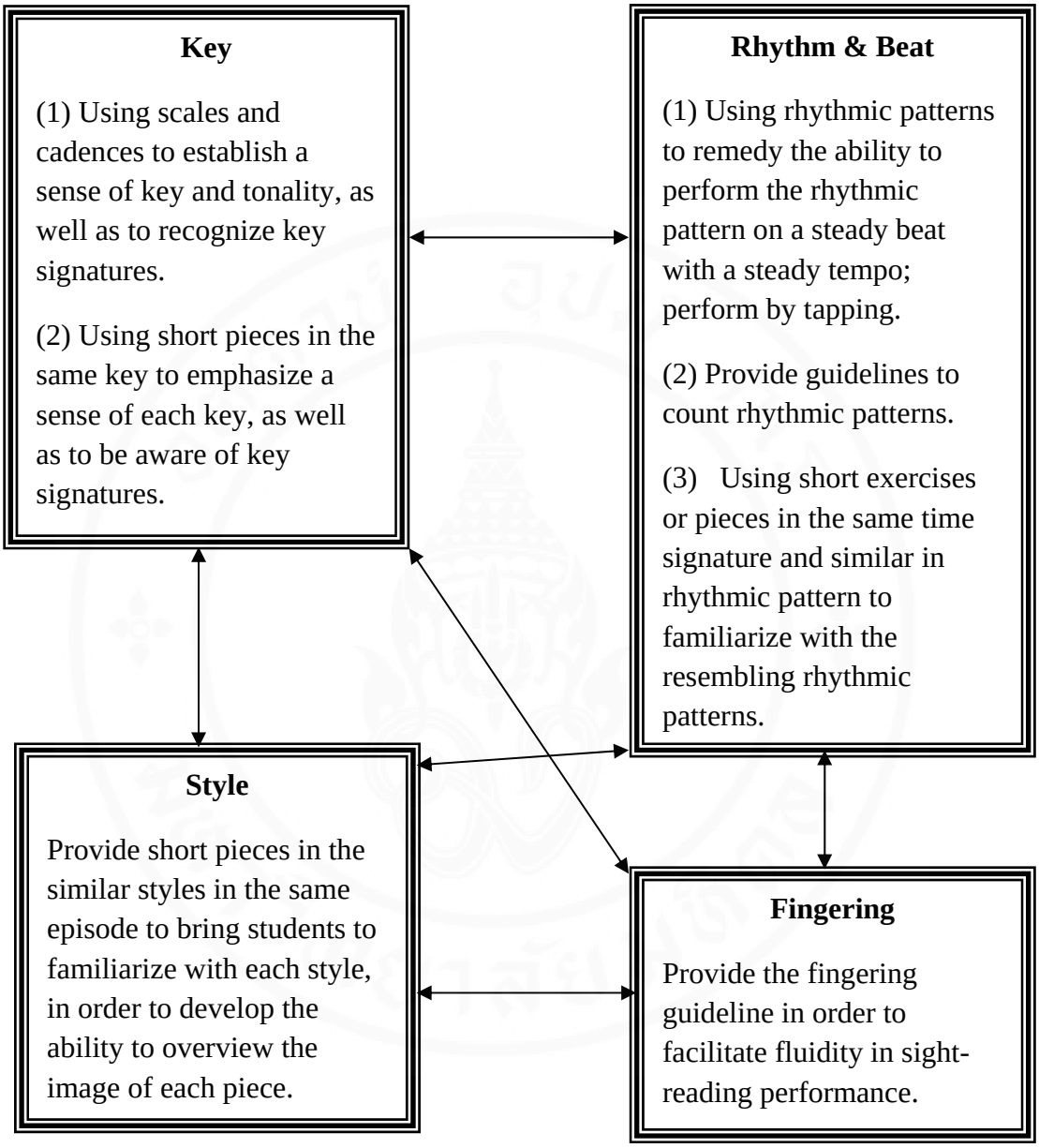

Figure 1.2: Solution: systematic classifications and systematic integrated knowledge.

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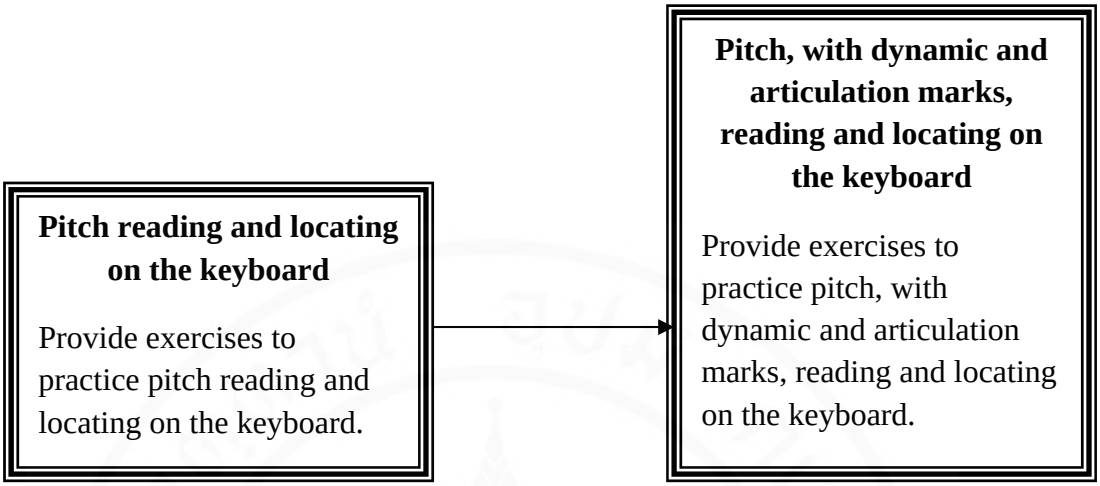

Figure 1.3: Solution: specific independent problem remedies

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1.8 Limitation of the study

1. This study will focus on students' capability to choose suitable tempo and keep steady beat, but will not focus on tempo marking. The ability to focus on tempo marking depends on the individual's sight-reading competency before using this exercise package, as well as students' practice discipline; for instance, if the student has a very low sight-reading competency before using this exercise package, s/he might eventually be able to develop her/his ability to play with steady beat and suitable tempo.

2. This study will not focus on fingering training. The fingerings in this exercise package are an option for students to help them while they are playing. The students can of course play a short piece with their own choice of fingering, if they can find the fingering while maintaining the steady beat.

1.9 Operational definitions

A remedial piano sight-reading self-instructional package is a self-learning instructional package of sight-reading exercises which consists of 10 books: book 1 is an overview theory and supplementary note reading exercises, whereas books 2-10 are the exercise books which are arranged progressive key signature according to complexity.

Piano sight-reading means an ability to perform a piano piece at sight while maintaining a suitable steady tempo, and performing the materials without stopping to go back and correct any mistakes. The performer will perform by reading standard western music notation that has not been seen before, showing understanding of musical syntaxes and musical elements including tonal syntax, rhythm syntax, pitch, time signature, dynamics, tempo, articulation, expression, and/or pedal.

Intermediate piano student means the piano student who is at a level equivalent to grade 4-6 of Trinity Guildhall, or The Associated Board of Royal Schools of Music.

Efficiency criterion of 70/70 means the efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students*.

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- **The first 70** means the efficiency of the process of *A remedial piano sight-reading self-instructional package for intermediate piano students* which measured by using students' average scored from formative tests.

- **The second 70** means the efficiency of the product of *A remedial piano sight-reading self-instructional package for intermediate piano students* which measured by using students' average scored form post-tests.

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CHAPTER II
LITERATURE REVIEW

A remedial piano sight-reading self-instructional package for intermediate piano students was invented and developed after the researcher had studied various documents, texts, and research studies related to the following areas:

2.1 Sight-reading

2.1.1 Definition and significance of piano sight-reading

2.1.2 Categories in sight-reading studies

2.1.3 Sight-reading components

2.1.4 Problems in sight-reading teaching

2.1.5 Piano sight-reading in Thailand

2.1.6 Sight-reading instructional books

2.1.7 Standard sight-reading evaluation

2.2 Intermediate piano level

2.2.1 Definition of intermediate piano level

2.2.2 Characteristics of intermediate piano level

2.2.3 Elements of intermediate piano level for Trinity Guildhall examination and The Associated Board of the Royal Schools of Music (ABRSM)

2.2.4 Musical development in children to adults

2.3 Instructional package

2.3.1 Definition of instructional package

2.3.2 Related theories

2.3.3 Types of instructional package

2.3.4 Elements of instructional package

2.3.5 Benefits of instructional package

2.3.6 Procedure for creation of instructional package

2.3.7 Efficiency of instructional package

2.4 Related researches

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2.1 Sight-reading

2.1.1 Definition and significance of piano sight-reading

Piano sight-reading is the ability to perform a piano piece at sight while maintaining a suitable steady tempo, and performing the materials without stopping to go back and correct any mistakes. The performer will perform by reading standard western music notation that has not been seen before, showing understanding of musical syntaxes and musical elements including tonal syntax, rhythm syntax, pitch, time signature, dynamics, tempo, articulation, expression, and/or pedal (Fry, 1996; Gordon, 2007; Udtaisuk, 2005).

Piano sight-reading capability is a consequence of musical literacy competency. In language, literacy serves as one of the most important skills in real-world communication including speaking, listening, reading, writing, and thinking (Mills & Mcpherson, 2006). Similarly, musical literacy competency will provide great benefits in many music-related aspects as follows:

(A) Benefit of exposure to musical repertoire

A good sight-reading skill allows students to avoid frustration, reduce practice time, and facilitates and assists students to explore new repertoire (Dirkse, 2009; Hardy, 1998).

(B) Benefit in musical aesthetic

The skill of sight-reading offers access to music (Deutsch, 1950). The ability to process and perform accurately is the primary basis of the ability to access music. This ability is the basis of the appreciation and expression of the aesthetic element in music (Udtaisuk, 2005).

(C) Benefit in evaluation examination

Sight-reading serves as one of the tools in musical skill evaluation. Sight-reading is evaluated based on the accuracy and expected tempo of performance within the limited preparation time (Udtaisuk, 2005).

(D) Benefit to serve as a supplementary career

Good sight-reading skills aid collaborative pianists, who need to accumulate accompanying experience and repertoire which has positive effects on sight-reading capability (Lehmann & Ericsson, 1996).

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2.1.2 Categories in sight-reading studies

The skill of sight-reading is one of the most important skills among five complex skills: (1) rehearsed music performance (repertoire), (2) unrehearsed music performance (sight-reading), (3) memorized performance (well memorized from music notation and re-created without music notation), (4) play by ear (where both learned music and reproduced aurally), and (5) improvisation (McPherson, 1995). In sight-reading teaching, the acquisition of sight-reading skill is being explored by music educators. Hence, a large number of music educators has been striving to find the pedagogical strategies in order to develop the teaching methods and techniques to facilitate the students' sight-reading competency (Udtaisuk, 2005). Researches in sight-reading fields were categorized in three groups as follow: (Wristen, 2005)

(I) Cognitive/Perceptual

Several music educators have devoted their time to study the cognitive and perceptual ability in sight-reading by focusing on physical ability (Goolsby, 1994), physical coordination, as well as musical awareness in order to analyze sight-reading skill acquisition (Udtaisuk, 2005).

(II) Factors in sight-reading achievement

A number of music educators have attempted to examine the involved relation with domain-related activities (Ronkainen & Kuusi, 2009), for instance, pattern recognition (Waters, Townsend, & Underwood, 1998), and the accumulation of accompanying repertoire (Lehmann & Ericsson, 1996).

(III) Educational/Pedagogical approaches

There is an enormous body of publications whose purpose is to improve students' sight-reading performance. However, several of these approaches have not been verified through research (Wristen, 2005). Therefore, to select from the available sight-reading methods needs more careful deliberation.

2.1.3 Sight-reading components

Dneya Bunnag Udtaisuk (2005) presents *A theoretical model of piano sight-reading components* to explain the components of piano sight-reading. Her theoretical model is based on diverse fields, including music education, psychology of music, psycho-musicology, as well as neurological science. The model of piano sight-

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reading components, named CAPE, consists of physical Coordination, musical Awareness, musical Potential, and musical Experiences (Udtaisuk, 2005).

1) Physical Ability and Coordination

Among the five human sensational perceptions, consisting of visual (sight), auditory (hearing), kinesthetic (touch), olfactory (smell), and gustatory (taste), three are the dominant factors related to sight-reading skill development: visual, auditory, and kinesthetic. Sight-reading requires sensational perception (physical perception), as well as multi-coordination between physical motions. Several researches in the physical perception and multi-coordination fields have been published in order to explain the physical phenomenon in sight-reading, as well as to emphasize the importance of physical perception and multi-coordination of physical motions.

Physical perception

(A) Visual sense (Sense of sight)

When someone is reading music, two major phenomena can be identified; fixation and saccadic. Fixation means the act of the eyes' staring or gazing to an objective point in order to gather new information (Rayner & Pollatsek, 1997). In sight-reading, fixation is the ability to take in the information at one time, called the size of fixation, whereas saccadic eye movement (ballistic eye movement) will occur when the eyes move from one spot to another spot. Each reader will have a different saccadic speed, which depends on the ability to scan the page or the ability to use rapid eye movement in order to grab the information from the music score. In contrast to language reading, in music reading, the eyes need to make multidirectional movements to support the ability to move both vertically and horizontally. However, saccadic movements in music are considered in two directions; progression (left to right) and regressions (right to left) (Rayner & Pollatsek, 1997; Weinberger, 1998). Absolutely different from language reading, music reading requires regressive eye movements, as well as more dimensions of eye movements; horizontal and vertical dimension. Moreover, music reading requires exact reproduction demands (performance), but language reading requires only the obtaining of meaning (Goolsby, 1994). In normal reading, 90 percent of reading time will be fixation, 10 percent remaining time will be saccadic (Udtaisuk, 2005): however, research has shown that

skilled music sight-readers make shorter and fewer fixations than less skilled music sight-readers, because they have more ability to grasp information (larger size of fixation) in one fixation time (Lehmann & McArthur, 2002).

In music reading, skilled readers' eye movements will move both further ahead (forward saccade), and also move back (regression) to the current point in order to ascertain themselves. On the other hand, less-skilled readers tend to read note-by-note (Goolsby, 1994). From this reading situation, skilled readers can obtain a larger picture and make inferences of each minor detail of the musical page, whereas they will look back (regression) to repeat the process again.

To improve the ability to read music score, the reader can use the strategy of practicing familiar music patterns. The researchers showed that the duration of the fixation becomes shorter, whereas the eye movements become longer with increasing familiarity of the music score (Lehmann & McArthur, 2002). In addition, the experience and the familiarity with the symbols serve as an important factor in sight-reading competency development (Sloboda, 2005). Related to the familiar pattern strategy, musical styles are important to music reading development. Earlier studies specified that contrapuntal music reading required more horizontal reading skill, while the homophonic music chord reading required more vertically scanned skill, which means chord by chord reading (Weaver, 1943).

(B) Auditory sense (Sense of hearing)

Auditory feedback means the sense of hearing that operates when one performs music by sight-reading. A piano sight-reader needs to play the piano with auditory feedback instead of playing the piano from eye to hand, in other words the piano sight-reader needs to be aware of the auditory sense. Auditory feedback plays an important role in two major ways: an aid to monitor accuracy (musical elements accuracy patrol), as well as an enhancement of expressive musical performance. Without auditory functions, the sight-reading performance is simply an act of the musical decoding.

Auditory feedback helps expectations or the ability to predict (Lehmann & McArthur, 2002); in addition, it can also help the performer to identify the mistakes for future correction in the next familiar part during sight-reading playing. In addition

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to note accuracy, the auditory feedback allows the performer to hear and adjust the sound quality of the notes played.

Expressive musical performance consists of two levels; the primary level of sound component relates to musical treasure including articulation, dynamics, and tempo, the secondary level of musical sound component relates to expressive musical elements including phrase, cadence, and chord progression (Udtaisuk, 2005).

A large number of students cannot perceive the sense of keys during sight-reading music. Several times when they play notes without awareness in the controlled key signature, they cannot perceive the wrong intonation. To establish this competency from initial level, it is necessary to go back to the music teaching philosophy of Johann Heinrick Pestolozzi's, "Sound-Before-Sight-Before-Theory." At the beginning of the music lesson, students should develop the competency of knowing vocabulary of tonal and rhythmic pattern through musical understanding and performance, before approaching to musical literacy (Bluestine, 1995; Gordon, 2007; Mills & Mcpherson, 2006). Lack of this basic level of education, piano student might be taught to translate from symbol to finger to sound, instead of symbol to sound to finger. In earlier stage of piano learning, if the students pay much attention to focusing on the music notation, they will have insufficient cognition to control both their instrument and listening (Mills & Mcpherson, 2006). The suggestion mentioned above should be the main philosophy in the teaching plan, which aims to teach the students to have literacy competency from the beginner level. However, in short term remediation in reading problem or sight-reading remediation from intermediate piano students who have experiences in playing scales and exploring various repertoires, the teacher can guide them to listen to the relationship of each note when playing scales and cadence carefully to help them to perceive the deliberate sense of key or sense of tonality (Gordon, 2007). Besides the remediation mentioned above, music theory knowledge can be another way to enhance the prediction ability and pattern recognition ability which the piano teacher should not avoid (Wolf, 1976).

Sight-reading is a complex skill which requires several essential subskills. At least it requires pattern recognition skills, prediction skills, recall skills, improvisation skills, as well as kinesthetic ability (Lehmann & Ericsson, 1996; Waters, et al., 1998). Sight-readers can limit their processing by increased planning

and anticipation. The anticipated ability is a sequence based on previous knowledge or familiarity (Lehmann & Ericsson, 1996). To infer the overall picture, the reader needs to act like a proofreader, who sometimes possibly overlooks a mistake with a familiar word. Proofreader's error phenomenon can help the music sight-reader to perform the music based on matching own expectations (Sloboda, 1976). Another important sight-reading subskill, improvisation, also serves as a problem solving tool, which is based on the skilled-readers' expectation (Lehmann & Ericsson, 1996).

(C) Kinesthetic sense (Sense of touch)

Sense of keyboard geography means the ability to play the piano keys effectively according to the musical notation (Udtaisuk, 2005). Usually skilled sight-readers are able to do a music-matching task faster than the less skilled sight-readers on both physical matching of notes, as well as matching of letter names with notes. The pianist needs to develop two kinds of senses; a sense of referential touch (to identify the keys by feeling without looking) and a sense of absolute touch (to identify the keys' location by physiological memory without looking) (Richman, 1986). When the pianist sight-reads music, fingering consistency is one of the most important types knowledge which is immediately applied from the basic principle of fingering knowledge. Undoubtedly, skilled piano sight-readers will perform music with both higher accuracy and consistency in fingering pattern than less skilled piano sight-readers (Sloboda, Clarke, Parncutt, & Raekallio, 1998). To achieve a good performance, the sight-reader must play with a coherent chain of fingering. A good sight-reader will find the fingering automatically. If sight-readers try to follow the suggested fingering, they would be obstructed. However, it does not mean that the sight-reader should practice sight-reading skill from non-fingered music only, but should consider that specified fingerings are as a possible advantage. In conclusion, the fingering should be marked in order to help the sight-reader to accomplish the sight-reading task fluently (Deutsch, 1950).

Although keyboard geography is important for the sight-reader, research has indicated that the number of errors accretes when visual feedback is prohibited (Lehmann & Ericsson, 1996). This statement does not mean that the reader should use visual feedback during the sight-reading time. Actually, the necessity to look at the musical page must be balanced with the necessity to use visual feedback (look at hand

and fingers); as well as this, the sight-reader should be careful of the danger of losing the place during visual feedback (Wristen, 2005).

Multi-coordination

The multi-coordination, the coordination between the senses and motor skills, in sight-reading performance involves the coordination between sight and touch. Although it seems to involve the coordination between sight and hearing, this latter type of coordination should be discussed as an aural awareness.

Visual-Kinesthetic sense (Sight-Touch)

Eye-hand span, a distance measurement between the fixated note and at the presented note playing, has been an interesting concept by researchers to investigate the distance of the advanced visual execution while the hands are performing the music (Rayner & Pollatsek, 1997). Skilled sight-readers have a larger size of eye-hand span than the less skilled sight-readers. The researches differently indicated the size of eye-hand span such as a little more than one beat in advance in the skilled readers (Truitt, Clifton, Pollatsek, & Rayner, 1997) half a beat in the less-skilled readers, and two beats in skilled readers (Rayner & Pollatsek, 1997), one measure (about four beats) in humming vocal music in the skilled reader (Goolsby, 1994). In summary, the real purpose of the eye-hand span research is to prove that the skilled sight-readers are able to grasp a larger of information than the less-skilled sight-readers (Udtaisuk, 2005).

2) Musical Awareness

Physical perception and multi-coordination between visual and kinesthetic senses serve as a fundamental component of sight-reading ability. The students should develope two prominent performance skills simultaneously; performance ability and the sense of music. Similarly, instead of using term “the sense of music,” several music educators created their own terminology; for instance, Zoltan Kodaly applied the term “Inner-hearing ability” (Udtaisuk, 2005), Gordon substituted the term “Audiation” and so on. Whether we use the term “the sense of music”, “inner hearing ability”, or “Audiation”, or whatever, these terms all imply “Musical Awareness.” The ability to hear music in mind when looking at the music page is a foundation of sight-reading (Merrick, 1965). Gordon’s Notational audiation stated that, the essential skill is to sight-read with understanding the syntactical meaning (Gordon, 2000).

The musical awareness consists of 3 aspects:

Aural awareness

According to the Pestalozzian hierarchy, "sound-before-sight-before-theory", in musical literacy education is based on the concept, "sound before symbol" (Bluestine, 1995). Edwin Gordon believes in the foundation of an aural perception before introduction of the symbol. He insists on the importance of the sense of the tonality and the sense of the rhythm in establishing both tonal syntax and rhythmic syntax to the students. Gordon provides the music learning sequences which consist of eight steps of music learning. The first five steps are arranged at the level of discrimination learning, whereas, the latter three steps are arranged at the level of inference learning. The first three steps in the level of discrimination learning are taught by singing and listening, without any musical notation. After that, the latter two steps in the level of the discrimination learning are related to a musical literacy. At the first step of Gordon's skill learning sequence, he uses the neutral syllables to present the important elements in the sound (called Aural/Oral step) both in tonal and rhythmic patterns. He believes that singing or chanting the pure sound (neutral syllable) can lead the students to develop sound perception better than using verbal syllables, which becomes related with the second step of Gordon's skill learning sequences (Bluestine, 1995).

Visual awareness

Meaningful reading activities can serve as an important teaching tool in order to promote visual awareness (a decoding ability). Teachers should teach the student to read music from a level of perception to a level of conception. This teaching is from short pattern to the overview, which based on the form and structure of the piece (Udtaisuk, 2005).

Psychological awareness

The reader's mental consciousness displays significance in both the amount of data processed, as well as level of information involved the fluency outcome and reader's expression (Udtaisuk, 2005). Psychological components were categorized in two main categories: perceptual span and working memory.

(A) Perceptual span

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The perceptual span is a measure of the amount of extracted information in the area of the fixation point (Udtaisuk, 2005). The perceptual span has a direct relationship with the eye-hand span; a distance measurement between the fixated note and the being note played. The perceptual span covers the area which ahead (the right side) of the fixation point. The measurement of the perceptual span (perceptual area) has attracted several researchers. From the earlier times to the present, it can be concluded that there are 4 different techniques for investigating perceptual span.

(1) Using a tachistoscopic technique, an apparatus that projects a series of image onto a screen at rapid speed, to present a melody line to measure the reader's ability to visualize and produce. The individual ability to produce the note after looking at a tachistoscopic presentation is called perceptual span. A defect of this method was the overestimate measurements due to the skilled readers being able to guess more notes by their predicting ability (Truitt, et al., 1997).

(2) Using a number dividing technique by dividing the number of notes on the line by the number of fixated notes on the line. A defect of this method was the underestimate measurement due to the researcher assuming that there was no overlapping information in the fixation. As an example of this method used first, in language reading, the calculation of the average saccade size in language reading were about seven to nine characters, which is an underestimate of the perceptional span (Truitt, et al., 1997).

(3) Using the eye-hand span technique, there were 2 methods used in this technique. The first one is asking the sight-readers to sight-read the notes in the light, and then turn off the light. The notes that the readers can produce after turning off the light were counted, and were observed to be perception span size. The second one is recording the average number of notes ahead of the hands. A defect of the first method was the overestimate measurement due to the skilled reader's ability to predict the coming notes, whereas a defect of the second method was the underestimate measurement due to the researcher counting only the notes ahead of the current playing time (ahead of hands), but excluding the number of notes to the left of fixation point (Truitt, et al., 1997).

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(4) Using an eye-contingent moving window technique (Truitt, et al., 1997) to determine the length of the reader's perceptual process ahead of the fixation

point (Udtaisuk, 2005). The size of the moving window, two-beat, four-beat, six-beat, or no window, is used to observe the relationships between the moving window size and the sight-reading performance. This research indicated that the pianist sight-reader could see no more than the whole measure than they were fixating. In two-beat window condition, there were longest playing time, longest fixation durations, more fixations, more regressions, shorter saccade lengths (Truitt, et al., 1997). In summary, it was determined that the perceptual span in less skilled readers was greater than two beats, but less than four beat. However, their average eye-hand span was around half a beat. This means the amount of notes ahead of the hands is around three to four beats (the perceptual span plus the eye-hand span becomes extracted information). Whereas the perceptual span in the skilled readers was roughly the same as for the less skilled readers, the skilled readers have larger eye-hand span, around two beats; it was concluded that the skilled readers can extract the information up to five beats ahead of the hands. (Rayner & Pollatsek, 1997; Truitt, et al., 1997). The important purpose of the research in perceptual span area is to apply the perceptual span to the note reading. Udtaisuk concluded that the reader must be able to process the musical notation more than one note at a time (Udtaisuk, 2005).

Several pedagogical sight-reading approaches emphasize on the benefit of the reading music ahead, as well as recommend this approach to the students (Deutsch, 1950; Dirkse, 2009; Maydwell, 2003). In order to develop the forward reading skill, it is necessary to understand that the perceptual span is adjustable. The perceptual span depends on the complexity of the task. In a difficult task, the perceptual span is shorter than in a simple task (Rayner & Duffy, 1986). In sight-reading task Preview benefit strategy, both similar pattern practice and similar structure to improve, can be used as a dominant strategy to improve the fluency in reading process due to it is the perceptual span development (Bernstein, 1981).

(B) Distraction

Both less-skilled and skilled reader can be distracted from the situation and environment. The less-skilled readers tend to be disturbed by both environment such as anxiety, as well as several subskills such as the laterality and short-term memory easier than skill readers, where as the skilled readers tend to be obstructed by the

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atonal music (Kopiez, Galley, & Lee, 2006; Lehmann & McArthur, 2002; Ronkainen & Kuusi, 2009; Waters, et al., 1998).

3) Musical Potential

Musical potential is used to predict individual's predisposition in music learning and music development. Musical potential is associated with several dimensions of music aptitude at least two elements are Biological potential (Born brain or Nature) and Psychological potential (Acculturated mind or Nurture). In summary, music aptitude is a product of both biological and psychological potential. Music aptitude will become stabilized at the age of nine, which means after the age of nine, music aptitude cannot be increased (Gordon, 2007). However, it does not mean that one cannot achieve in music; Music achievement means a measure of musical learning success, whereas Music aptitude means a measure of a student's predisposition to learn music. Normal people use approximately only ten-percent of potential to achieve music (Gordon, 2003).

Biological potential

(A)Brain

Long time ago, people had known that the neural activations in right hemisphere of brain are activated when doing music task. However, a research indicated that music task activates both hemispheres of the brain (Sergent, Zuck, Terriah, & MacDonald, 1992).

The human brain consists of three main parts: the cerebral cortex, brain stem, and cerebellum. The visual and aural perception occur in the cerebral cortex aria. The cerebral cortex can be divided into four parts: frontal lobe, parietal lobe, occipital lobe, and temporal lobe. Remarkable brain competency, the visual and aural perceptions originate from the temporal lobe. Besides, the visuo-motor transcoding pathways originate from the parietal lobe (Udtaisuk, 2005).

Music reading task and word reading task demonstrated the same pattern of brain cells. However, the sight-reading task stimulates the cortical area which is slightly different area from the verbal task (Sergent, et al., 1992). The activated patterns in three major reading tasks: music notation, verbal notation, and numerical notation in the professional pianist are similarly. All of them occur in the parietal area. Whereas, the difference between the two are the area of music notation and verbal-

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numerical notation; right occipito-temporal junction, intraparietal sulcus, and superior parietal lobe (Schön, Anton, Roth, & Besson, 2002).

(B) Gender

The left hemisphere is liable to rhythmic perception and verbal cognition, while the right hemisphere is liable to melodic perception and non-verbal cognition (Sylwester, 2004).

Directly related to gender, females tend to recognize on the factual recall; in music means specific notes, and fingering pattern whereas, males tend to recognize on the conceptual recall; in music means harmonic structure and chord progression more (Sylwester, 2004). To develop sight-reading skill, it might be the instructor's need to regard to the learning style of gender difference. Sandstrom (1998) specified that the landmark attention (prominent features of the musical phrases) was found more in females, while the geometrical relationships (spatial relationships) attention was found more in males (Sandstrom, Kaufman, & Huettel, 1998).

Psychological potential

Due to individual personality effects to the literacy development (Udtaisuk, 2005), hence it is the teacher's responsibility to pay attention to the students' individual personality in order to develop their sight-reading competency.

4) Musical Experience

Music experience conducts an important role on the piano sight-reading competency from the fundamental literacy to an expertise stage. Musical experience in sight-reading task can be divided into two types; Interactive musical experiences and Personal sight-reading experiences. Both of them facilitate and promote the musician to gain readiness and skills for sight-reading performance (Udtaisuk, 2005).

Interactive music experiences

The interactive music experiences are beneficial for sight-reading acquisition and music enjoyment. The interactive experiences can be divided into two types; formal education and informal participation following (Udtaisuk, 2005):

(A) Formal education

Aural-based training

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Based on Johann Heinrick Pestalozzi's music learning theory "Sound-Before-Sight-Before-Theory", Gordon stated that music has a parallel meaning to

language; they both are the need to communicate. Speech also has a parallel meaning to music performance (e.g. singing, chanting, performing, and improvising, and so on). Thought (think what is communicated in language, how to communicate in language) is parallel to Audiation (think what is communicated in music, how to communicate in music). Both language and music, in order to give the meaning to whatever is communicated, one needs to recall and make the connections from the early experiences, while also needs to anticipate or predict what will be hearing next. In other words, one will audiate the music by summarizing and generalizing the contents by recalling and making the connections from the early experiences, as well as anticipating or predicting what will follow. Audiation is a skill that needs to be developed in order to receive more music understanding. Music is different from language due to it has no grammar. But, it has "syntax" instead. To develop the audiation skill, one needs to develop both tonal syntax (tonality) and rhythmic syntax (macrobeat, microbeat, and rhythmic pattern) in order to understanding music (Gordon, 2007).

McKnight (1975) indicated the tonal perception of music patterns is supporting both sight-reading and auditory-visual discrimination skills (McKnight, 1975). Hence to understand the tonal concept can help the melodic sight-reading improvement.

Pattern prominence in music reading

Gordon stated that to the smallest chunk in language understanding is a word, not letters. Similarly to music, the smallest chunk in music audiation is a pattern; whether tonal pattern or rhythmic pattern. The ability to recognize the pitch name and time-value names cannot be specified to the audiation ability, instead, it is more decoding ability (Gordon, 2007).

Analytical thinking

Similar to a reading comprehension skill development, one can improve a music reading skill with comprehension by engaging with the individual imagination and cognitive thinking skills (Udtaisuk, 2005).

Important movement in music reading

Salzberg and Wang (1989) indicated that foot tapping and counting out loud helped the string students to improve their rhythmic sight-reading ability. In the

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experiment of Salzberg and Wang, they tried to find the most effective prompt by using several techniques called “Prompt conditions,” which consists of counting out loud, foot tapping, counting and tapping, and no prompt. The result indicated that counting out loud was the most effective prompt (Salzberg & Wang, 1989).

(B) Informal participation

Accompanying

Lehman and Ericsson (1996) indicated that the solo pianists have inferior competency to accompanists in sight-reading task. The researcher provided the conclusion of the sight-reading skills acquisition related to the accompanying activities with the appropriate and adequate challengs (Lehmann & Ericsson, 1996).

Sight-reading practice

Kopiez and Lee (2006) showed a dynamic model which indicated that
(1) general pianistic expertise served when the sight-reading task was easy,
(2) psychomotor speed, information processing speed, inner hearing, and sight-reading expertise (practiced-related) served when the sight-reading task was more complex,
(3) psychomotor speed (mental speed) served as the dominant role and was accompanied by sight-reading expertise (practice-related) (Kopiez & Lee, 2006).
These mentioned results implied that psychomotor speed (mental speed) plays the important role as a sight-reading predictor. To summarize, Kopiez and Lee (2008) stated the three categories of sight-reading subskills: (1) general cognitive skills (e.g. working memory, short-term memory), (2) elementary cognitive skills (e.g. tapping speed, information processing speed) and (3) practice-related skills (e.g. self-practice, inner hearing skill, sight-reading skill). In addition, the best four predictors to predict the sight-reading competency is (1) trilling speed (in elementary cognitive skills), (2) critical time window for sight-reading skill acquisition; sight-reading acquisition can be develop to the highest achievement at the age of 15 of accumulated activities including chamber music, accompanying, sight-reading, and solo performance, (3) information processing speed (in elementary cognitive skills), and (4) inner hearing (in practice-related skills). Hence, to become an excellent sight-reader, one is assumed to develop both practice-related skills (sight-reading expertise and inner hearing), as to, practice-unrelated skills (information processing speed) (Kopiez & Lee, 2008).

(A)Technical-related skills (Tactile skills)

Tactile sense of keyboard plays a dominant role in sight-reading. Tactile sense of keyboard facilitates the readers to confidently feel the keyboard geography (Richman, 1986; Udtaisuk, 2005). The pianists need to practice both important sense of touch; a referential sense of touch and an absolute sense of touch (Richman, 1986).

(B) Analytical-related skills

Ablility to read ahead

The ability to read ahead is a phenomenon consequence of well-developed eye-hand span (Truitt, et al., 1997; Udtaisuk, 2005).

Ability to memorize and recall written music

The ability to memorize written music involves individual's short-term memory, whereas the ability to recall written music (familiar patterns) involves individual's long-term memory (Udtaisuk, 2005).

Ability to correct errors

The skilled-readers play the expected note following by their prediction or expectation. When some wrong notes were played, the skilled-reader will use improvisation, one of the sight-reading subskills, to solve the problem during sight-reading task (Lehmann & Ericsson, 1996).

2.1.4 Problem in sight-reading teaching

(I) Sight-reading teaching neglect

A large number of piano teachers tend to neglect to develop students' functional skills, for example, sight-reading. They are liable to emphasize on teaching techniques and polishing the pieces (Hardy, 1998).

(II) Sight-reading teaching approach ignorance

The majority of piano teachers do not know how to teach sight-reading. Moreover, some piano teachers would not like to teach sight-reading because they themselves have a rotten sight-reading skill (Hardy, 1998).

(III) Sight-reading teaching by guessing the remedies

Many teachers guess the approach to remedy the students' sight-reading skills without understanding in the sight-reading acquisition, for instance, aural awareness, and so on (Bean, 1938).

2.1.5 Piano sight-reading in Thailand

The students' sight-reading problems originate from the teacher's pedagogical strategy. The students' problems gradually accumulate until they become immense problems. Most students have an inferiority complex in sight-reading.

Teacher situation

Teachers' attitudes

Several negative attitudes towards sight-reading teaching includes the following (Khamrong, 2002):

1) Some teachers believe that practicing sight-reading near the examination time would help the students practice sight-reading effectively.

2) Some teachers believe that sight-reading is a low score section in the examination. This attitude brings out less motivation in teaching sight-reading to the students.

3) Some teachers believe that sight-reading is only a supplemented knowledge. Therefore, supplemented knowledge should be only supplement, not major knowledge.

4) Some teachers believe that sight-reading is the individual talented ability. Hence, if one was categorized to be untalented group, s/he cannot develop sight-reading ability.

Teachers' problems in sight-reading teaching

The teacher's problems in sight-reading teaching happen and are caused by several reasons including following (Khamrong, 2002):

1) The teacher never explains the importance of sight-reading to the student clearly.
If the student cannot realize the benefit of sight-reading, s/he will not have enough motivation to develop own sight-reading skill.

2) The teacher has no sight-reading teaching plan. Actually, there are two kinds of sight-reading teaching plans: Advanced managed plan, and Immediate managed plan. It was found that both types of these plans were used unsuccessfully due to the lack of clarity.

3) The teacher has his/her own inferior reading skill. Khamrong stated that the piano teachers themselves have poor sight-reading skills.

4) Materials deficiency. In reality, there are some available sight-reading materials, but the main problems are the insufficiency of teaching process and procedure in these materials.

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5) Evaluation deficiency. The piano teachers never evaluate the students' sight-reading ability in the form of record-scores, as well as never emphasize on the evaluation on appreciation and expression aspects. Moreover, the way to evaluate students' sight-reading ability is to observe the grading test scores from the foreign examination board such as Trinity Guildhall and The Associated Board of the Royal Schools of Music (ABRSM).

Student situation

Students' attitude

Similarly to teachers' attitude towards sight-reading, students' attitude toward sight-reading should be understood. The students have negative attitude towards sight-reading, and do not like sight-reading (Khamrong, 2002).

Students' problems in sight-reading

Student' problems in sight-reading are caused by two primary reasons; the first one is lacking and/or misunderstanding of sight-reading benefit; the latter is the inability to integrate all studied knowledge (Khamrong, 2002).

2.1.6 Sight-reading instructional books

(I) The ideal of sight-reading instructional book

Dianne Hardy recommended the significant elements in the sight-reading book, which needs to be covered in the sight-reading instruction book (Hardy, 1998):

(1) Well-Sequenced and Systematic Approach

(2) Slightly inferior level to the repertoire level

(3) Interesting music

(4) Variety of keys and rhythms

(5) Variety of styles

(6) Research based instruction

(7) Evaluation and diagnosis

(II) Sight-reading instructional books currently employed by various music schools in Thailand.

Trinity Guildhall examination facilitates the candidate by providing the sight-reading books "Sound at Sight." Sound at Sight series consist of three books; initial to grade 2, grades 3-5, and grades 6-8. There are suggestions, explanation, and

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tips on examination preparation in these books. The short pieces in these books are stepped progressively between each grade.

Similar to Trinity Guildhall examination board, The Associated Board of the Royal Schools of Music also facilitates the candidate by providing the sight-reading books "Specimen Sight-Reading Tests." Specimen Sight-Reading Tests series consist of eight books from grade 1 to grade 8. There are no suggestions, explanation, and tips on examination preparation in these books. However, the short pieces in these books are also stepped progressively between each grade same as Trinity Guildhall.

According to the researches in sight reading field in Thailand, Khamrong (2002)(Khamrong, 2002) and Tayrattanachai (2009) mentioned that teachers and students use these books for examination preparations. However, it is unsuccessful to teach sight-reading by using these books because the guidance problems; too less or none of the guidance, not relevant to the students' problems, in foreign language, lack of teaching procedure. (Khamrong, 2002; นิอร เตรัตนชัย, 2552). In summary, these books seem to be more exercise books than teaching method books.

2.1.7 Sight-reading evaluation

Trinity Guildhall

In piano graded assessments, sight-reading is arranged to be a supporting test choice up to grade 5, then in grade 6-8 sight-reading is ordered to be the requirement. In the supporting test choice in lower grade, candidates must choose two tests from aural, sight-reading, improvisation, and musical knowledge.

Sight-reading evaluation criteria

Trinity Guildhall examination determine the points of sight-reading to be 10 points out of 100 total points. The pieces in sight-reading test are approximate two grades lower than the undertaken grade. The candidates will have short time duration around half a minute to prepare and are allowed to try out any part of music on the keyboard.

The evaluation score of 10 marks can be divided to two parts; 8 marks are available for note accuracy and rhythm, whereas 2 remained marks are available for dynamic and expression.

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The Associated Board of the Royal Schools of Music (ABRSM)

Similar to Trinity Guildhall, The Associated Board of the Royal Schools of Music (ABRSM) also provides the assessments in several music areas, which offers from beginner levels up to diploma levels.

In piano graded assessments, sight-reading is arranged to be a requirement from beginner to advanced levels.

Sight-reading evaluation criteria

ABRSM determines the points of sight-reading to be 21 points out of 150 total points. The candidates will have short time duration around half a minute to prepare and are allowed to try out any part on the keyboard.

The range of received points can be shown the sight-reading competency as following:

(1) Less than 13 points will be evaluated to fail on this task; wrong note and rhythm reading, discontinuously playing, wrong conducting key signatures.

(2) From 14-16 points will be evaluated to be a standard level; correct note and consistent rhythm reading, continuously playing, conducting key signatures.

(3) From 17-18 points will be evaluated to be better than the standard level; more ability to present details of the lyrics.

(4) From 19-21 points will be evaluated to be the best in the standard level; more ability to present the musical style.

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2.2 Intermediate piano level

2.2.1 Definition of intermediate piano level

James W. Bastien (p.169) stated that "The intermediate student is one who has the facility to play sonatinas, Bach's *Two-Part Inventions*, Kabalevesky's *Toccatina*, and other works of similar difficulty" (Bastien, 1988).

Nakhon Khamrong stated the definition of intermediate level piano students that the intermediate level piano students are piano students whose ability is equivalent to grade 3-6 of the international examination boards (Khamrong, 2002).

Chintakarn Music Institute, one of the large private music schools in Bangkok, Thailand determines the level of the intermediate piano level that this level refers to grade 3-6 of Trinity Guildhall examination and/or The Associated Board of the Royal Schools of Music (ABRSM) (www.chintakarn.com/info/general.html).

In this research, the researcher regards as the level of intermediate piano student is equivalent to grade 4-6 of Trinity Guildhall examination and/or The Associated Board of the Royal Schools of Music (ABRSM) for reasons of the possibility to use self-instructional package regards as the sight-reading and technical work (scales) requirement of both international institutes.

2.2.2 Characteristics of intermediate piano level

The students in intermediate piano level should be able to play adequate scales in both major and minor scales (Hinson, 1991). In addition, the students in intermediate level already have the understanding of the musical elements. They are developing the understanding and creation of voicing, tone color, pedaling, nuance, dynamic shape, aural imagination and emotional response (Camp, 1992).

2.2.3 Requirements of intermediate piano level for Trinity Guildhall examination and The Associated Board of the Royal Schools of Music (ABRSM)

Among the topics in the assessment of musical grade examinations including pieces, technical work, aural, sight-reading, improvisation, and musical knowledge, sight-reading and technical work (scales) are considered as a core object of *A remedial piano sight-reading self-instructional package for intermediate piano students*.

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Piano sight-reading test in Trinity Guildhall examination and The Associated Board of the Royal Schools of Music (ABRSM) are specified to be approximately two grades lower than the grade undertaken. Sight-reading at grade 4 of Trinity Guildhall examination is determined to be in the keys not exceeding than three sharps/flats in major keys, and one sharps/flats in minor keys, whereas to be in the keys not exceeding than three sharps/flats at grade 6. However, sight-reading test at grade 4 of The Associated Board of the Royal Schools of Music (ABRSM) is determined to be in the keys not exceeding than three sharps/flats in major keys, and two sharps/flats in minor keys, whereas to be in the keys not exceeding than four sharps/flats at grade 6.

Technical work (scales) in both Trinity Guildhall examination and The Associated Board of the Royal Schools of Music (ABRSM) are scales in the key of four sharps/flats in both major and minor from grade 4 (The Associated Board of the Royal Schools of Music, 2011; Trinity College London, 2008).

2.2.4 Musical development in children to adults

Music learning is related to cognitive development. Hence, to understand the physical, emotional, social development, and musical development are very important to the music instructors in order to create the learning activities which is accorded to the learning at each age.

Age of 7-12

Children at this age are not able to solve problems based on the created hypothesis. However, they want to be able to award achievements. In musical development, they are able to response more complicated rhythmic patterns, keep a steady beat, play ostinato, sing Round and Canon, listen to instrumental music, better understanding of pitch, and play keyboard instrument.

Age of 12-15

Children at this age are able to solve problems based on the created hypothesis. They are able to think reasonably. They need the suggestions from parents or teachers. In musical development, they are able to understand musical components including rhythm, pitch, structure or form, harmony, texture, tone color, and characteristics of sound.

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Age of adolescents to adult

Some children become adolescents from the age of twelve and reach to adult around the age of twenty, but some children become adolescents from the age of fifteen. Hence, to indicate the age of adolescents, it can be considered of their change and development. In musical development, the change of voice is obviously heard. However, they are ready to develop instrument on performance skills.

2.3 Instructional package

An instructional package is one of the ways of communication between instructor and learner. It consists of instructions and essential contents. The definition, related theories, types, elements, benefits, and procedure for creation of the instructional package will be stated in the following:

2.3.1 Instructional package

The instructional package is a multimedia application which is according to the content and experiences of the individual units. The purpose of the instructional package is to modify the learners' behavior to be more efficient (Promwongse, 1977; Ruengsuwan, 1979; Srisaard, 1994). To summarize, the instructional package is one of the tools in the process of teaching and learning in order to develop the learners' behaviors.

2.3.2 Related theories

Sunee Hemaprasit (2000: 39-59) stated that the instructional package has a foundation based on several psychological theories as follows:

(I) John Dewey's theory

The belief of this theory is based on the hands-on and mind-on learning, which means the students will learn by doing and thinking. The best learning will be occurred when the students are solving problems according to self-significance.

(II) Behavioral learning theory

The belief of this theory is based on a positive reinforcement, which is occurred between stimulus and response. The instructor should create a motivation to

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the students in order to bring the learner to develop learning behavior and positive attitude.

(III) Cognitivism theory

The belief of this theory is based on a development between brain and mind. Human's learning relates to thinking process, perception, and the interaction of concrete thinking.

To summarize, the theories relate to the instructional package emphasize on the self-learning and self-thinking in order to construct an ability to solve the problems.

2.3.3 Types of the instructional package

Chaiyong Promwongs (1977:53) categorized the instructional package in four categories following:

I) Instructional package for lecture

This type of the instructional package is designed to assist the instructors. It mostly serves as a tool in the universities, where the lecture from the instructor plays an important role in education.

II) Instructional package for group activity

This type of instructional package has a purpose to help the learners in group learning. During an activity time, the learner will help each other to learn from the instructional package. The instructor will become the learners' assistance, when they have problems in understanding the contents.

III) Instructional package for self-learning and self-assessment

This type of instructional package focuses on self-learning. It is designed to be learnt outside the classroom. The main concept of self-instructional package is that the learners can develop the skills by themselves according to their interests.

IV) Instructional package for long distance teacher education

This type of instructional package has a main objective to eliminate the related-factors in learning which are place and time. The learners are able to learn by themselves at home. It can be appeared in several types, for example, broadcast television, movie, and so on.

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To summarize, the instructional package can be divided into several types. To choose an appropriate instructional package for the learner, the instructor should consider the learning objectives and contents.

2.3.4 Elements of the instructional package

The instructional packages might be created in different forms; however the important elements which need to be appeared in the instructional packages are as follows (Promwongs, 1978: 105-106):

1) Instructor's handbook

The instructor's handbook consists of a handbook and a teaching plan for instructor. In order to success in using the instructional package, the instructor and learner exactly need to follow by the instruction in the instructor's handbook; otherwise the instructional package's efficiency will be decreased.

2) Assignments

The assignments are for the learner, which are arranged step by step of learning sequences. The learner needs to follow step by step in the instructional assignments. Without discipline to control by themselves, the learner tends to miss the significant step of learning or break the learning sequences.

3) Content and media

There are several types of media for learning in both printed matter and visual aids. The learner needs to follow by the instruction commands, which specify the steps of the using media.

4) Assessment

Learning process assessment can be in various forms, for example, exercise, report, question and answer, test, and so on. It is created under the question that after using the instructional package, the learner can change (improve) behavior or not.

To summarize, the instructional package is in the form of accomplished multimedia. The instructor is able to conveniently utilize it to modify the learner's behavior immediately.

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2.3.5 Benefits of the instructional package

The instructional package provides a great benefit to both instructors and learners. It can be concluded as follows (Promwongs, 1980a: 121):

1) Assist the instructor to teach contents and pass on own high abstraction level of complex experiences.

2) Activate the learner to contents due to the learner's participation in learning system.

3) Give the learners an opportunity to express their opinion.

4) Serve as an accomplished tool for the instructor.

5) Be independent from the instructor's variance in emotional exhaustion.

6) Be independent from the instructor's personality.

7) Reduce the teacher's deficiency.

8) Be able to use outside lesson.

2.3.6 Procedure for creation of the instructional package

Chaiyong Promwongse (1980b: 123) stated the procedure for creation of the instructional package following:

1) Determine a classification of the content or experience.

2) Divide the contents to be in form of unit.

3) Determine topics in each unit.

4) Determine concept and principle in each unit according to the topic.

5) Determine the objective in accordance with general objective, and then modify to behavioral objective.

6) Arrange the learning activities relates to the behavioral objective.

7) Create the assessment form according to the behavioral objective.

8) Select and create the material and procedure based on instructor's adoption.

9) Find the instructional package's efficiency.

10) Using the instructional package.

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2.3.7 Efficiency of instructional package

Chaiyong Promwongse (Chaiyong Promwongse, 2551: http://inno-sawake.blogspot.com/2008/07/4.html) stated that the efficiency of instructional package means the quality of instructional package, which benefit the learner in the understanding of specific content(s). Purposely, the objectives of proving efficiency of the invented instructional package are persistent to the quality of the invented instructional package.

The instructional package inventor will evaluate the invented instructional package called developmental testing. This testing consists of two processes. The first process is the process of tryout which has the purpose to improve the weak point(s) of the invented instructional package. The second process is the process of trail run which is the real teaching process by using the tried out invented instructional package.

The efficiency of instructional package is determined by the form of the standard criteria, which means the level of the effectiveness of the instructional package. Generally, two items in the invented instructional package are determined in form of number such as 85/85, 80/80, 70/70. The first number represents the transitional behavior which determines process. The second number represents the terminal behavior which determines product.

Certainly, the inventor establishes the standard criteria based on the suitability and possibility. Normally, the subject related to knowledge memorization is determined to be at 80/80, 85/85, or 90/90. The subject related to the skill or attitude is determined to be inferior to the first subject area, usually at 70/70. However, the inventors have the necessary to careful the establishment of the standard criteria to be the suitable criteria.

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2.4 Related researches

Chindarat Charoenwongse (1998) presented *The status of undergraduate piano pedagogy course offerings in Thai universities*. The study showed that the majority of piano teachers are not music graduates. Students' problems include lacking of daily musical enrichment at home, poor posture, weak aural, sight-reading and ensemble skills, limited repertoire, and unbeneficial use of piano exams. Piano pedagogy study needs further development to strengthen teacher training, continuing education for current teachers, and the community is needed (Charoenwongse, 1998).

Nakhon Khamrong (2002) conducted the qualitative research, *A study in how to teach sight-reading to the intermediate level piano students. Case study: Piano teaching in Muang District Chiang Mai province*. The objective was to study teaching of sight-reading to the intermediate piano students. The findings were that in teaching of sight-reading, there were problems in terms of concept and value, teaching plan, teaching method, materials and teaching aids, and pattern of evaluation. Those problems occurred because of the concepts and policies of tutors and foreign music institutes, administration system, teaching system, and the tutors themselves (Khamrong, 2002).

Dneya Bunnag Udtaisuk (2005) presented *A theoretical model of piano sightplaying components* to explain the components of piano sight-reading by assessing physical Coordination, musical Awareness, musical Potential, and musical Experiences, subsequently referred to as CAPE (Udtaisuk, 2005).

Ni-on Tayrattanachai (2009) conducted the qualitative research *Sight-reading in primary piano's students*. It focused on the opinion of piano teachers who teach primary piano students toward the importance of teaching sight-reading, the teaching process of sight-reading, and problems and solution in the teaching of sight-reading (Tayrattanachai, 2009).

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CHAPTER III
RESEARCH METHODOLOGY

The purposes of the experimental research *A remedial piano sight-reading self-instructional package for intermediate piano students* were to: 1) invent *A remedial piano sight-reading self-instructional package for intermediate piano students*, 2) verify the efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students* following the efficiency criterion of 70/70, 3) compare the average results of pre-test and post-test, and 4) explore the students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students.* The assessments in sight-reading competency in this experiment consisted of pre-test assessment, formative test assessments, and post-test assessments. The research procedures were stated by the following topics:

3.1 Population and sample (of population)

3.2 Research instruments

3.3 Creation of research instruments

3.4 Collecting data process

3.5 Analyzing data

3.6 Statistics used for data analysis

3.1 Population and sample (of population)

Population

The population in this study was 56 intermediate piano students in the following 7 qualified piano studios:

(1) Ajarn Arweewan Wattanamano's studio

(2) Ajarn Poonsant Tainchaivanich's studio

(3) Ajarn Pornchanan Suravichai's studio

(4) Ajarn Puntita Panyadee's studio

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(5) Ajarn Siri Sranoi's studio

(6) Ajarn Sornsuang Tangsinmonkong's studio

(7) Ajarn Suthida Pichaikul's studio

The above mentioned seven studios were invited to participate in this experiment by considering of the following qualifications:

(1) At least 5-year teaching experiences

(2) Holding Diploma level qualification(s) of The Associated Board of the Royal Schools of Music (DipABRSM), or Diploma level of Associate Trinity College London (ATCL), or bachelor degrees in piano performance.

(3) Teaching absence was not more than two times in ten weeks during this experiment.

(4) Having the willingness to participate in this experiment.

Sample (of populations)

The sample of populations in this study was 23 intermediate piano students from 7 qualified piano studios whom were selected by the 7 qualified instructors; these instructors considered the following students' qualifications:

(1) The piano performance ability equivalent to the intermediate level.

(2) Score below 70% on the placement test (same as pre-test).

(3) Having the willingness to participate in this experiment.

From the qualifications mentioned above, the researcher acquired 23 intermediate piano students to be the sample population in this study.

3.2 Research instruments

The research instruments consisted of

1. A series of *A remedial piano sight-reading self-instructional package for intermediate piano students* which consisted of 10 exercise books.

2. Teacher's handbook consisted of the instructional guidelines, the pieces for pre/post-test assessments, the pieces for formative assessments, the assessment guidelines for teachers, and the assessment forms.

3. The students' satisfaction questionnaire with Likert's five rating scale

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3.3 Creation of measurement tools

Creation of "A remedial piano sight-reading self-instructional package for the intermediate piano students" consisted of six steps.

(1) Reviewing of related literature pertaining to text, researches, and studies in piano sight-reading and piano pedagogy.

(2) Designing the research instruments which consisted of 10 exercise books, teacher's handbook including pieces for pre-tests, formative tests and post-tests, as well as the students' satisfaction questionnaire.

(3) Verifying the validity of *"A remedial piano sight-reading self-instructional package for the intermediate piano students"* by 5 experts, and the satisfaction questionnaire by 3 experts.

The researcher invited five experts in piano education field to verify the validity of *A remedial piano sight-reading self-instructional package for intermediate piano students* follows the name lists below:

1. Ajarn Pawatchai Suwankangka: A piano instructor at Triniti Music Institute and Chintakarn Music Institute.

2. Ajarn Poonsant Tainchaivanich: A piano instructor at College of music, Mahidol University.

3. Ajarn Sornsuang Tangsinmonkong: A piano instructor at College of music, Mahidol University.

4. Ajarn Tharach Wuttiwan: A piano instructor at College of music, Mahidol University.

5. Ajarn Trajit Chaitongkao: Director of Sansiang music school, Samutsakorn.

A series of *A remedial piano sight-reading self-instructional package for intermediate piano students* was presented to all experts to verify the concept in objective creation, concept in content creation, concept in assessment tool creation, and content validity.

The researcher invited three experts in piano education field to verify the validity of the student satisfaction questionnaire follows the name lists as follows:

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1. Ajarn Poonsant Tainchaivanich: A piano instructor at College of music, Mahidol University.

2. Ajarn Sornsuang Tangsinmonkong: A piano instructor at College of music, Mahidol University.

3. Ajarn Tharach Wuttiwan: A piano instructor at College of music, Mahidol University.

The students' satisfaction questionnaire was presented to all experts to verify the suitability of two main categories: (1) the questionnaire related to the students' general information, and (2) the questionnaire related to the students' satisfaction.

The criterion meters were following:

Agree	1	Score
Hesitate	0	Score
Dispute	-1	Score

Then the received scores were calculated by below formula.

$$IOC = \frac{\sum R}{N}$$

IOC is Index of concept in objectives creation, or concept in content creation, or concept in assessment tools creation congruence.

$\sum R$ is Accumulation of expert opinion scores.

N is Number of experts.

The IOC result must equal or higher than 0.5 score.

A remedial piano sight-reading self-instructional package for intermediate piano students received IOC results between 0.80-1.00 scores.

The students' satisfaction questionnaire received IOC results between 0.67-1.00 scores.

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(4) Bringing *A remedial piano sight-reading self-instructional package for the intermediate piano students* to a sample tryout group which consisted of 6 intermediate piano students in order to find the defect of 10 lesson books.

(5) Improving *A remedial piano sight-reading self instructional package for intermediate piano students* after tryout with the try-out group.

After trying out of the tryout group, the researcher corrected some wrong-typed notes, as well as added more explanation about the time signature, and

(6) Bringing *A remedial piano sight-reading self-instructional package for intermediate piano students* to the sample population of this research.

3.4 Collecting data process

The researcher created the process in a data collecting process in the experiment of *A remedial piano sight-reading self-instructional package for intermediate piano students* by dividing into 2 groups of processes: (1) Contacting process with the instructors, and (2) Collecting data via the instructors.

(1) Contacting process with the instructors

The researcher planned the contacting process as follows:

1.1) Verifying the instructor's qualifications.

1.2) Informing *A remedial piano sight-reading self-instructional package for intermediate piano students* to piano instructors in several studios.

1.3) Asking the willingness of each instructor in order to participate in this experiment.

1.4) After an acquisition of qualified studios, the researcher made an appointment by phone with each instructor to explain details of *A remedial piano sight-reading self-instructional package for intermediate piano student*, as well as the collecting data process.

1.5) Distributing *A remedial piano sight-reading self-instructional package for intermediate piano student*, teacher's handbook, and the student satisfaction questionnaire to the instructors in order to distribute to their students.

1.6) Distributing a set of an assessment form to the instructors.

1.7) Contacting the progression every three weeks by phone.

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1.8) Gathering the assessment forms and the student satisfaction questionnaire from the instructors within the 11th week.

(2) Collecting data via the instructors

The researcher explained the collecting data process by a chart of collecting data process via the instructors.

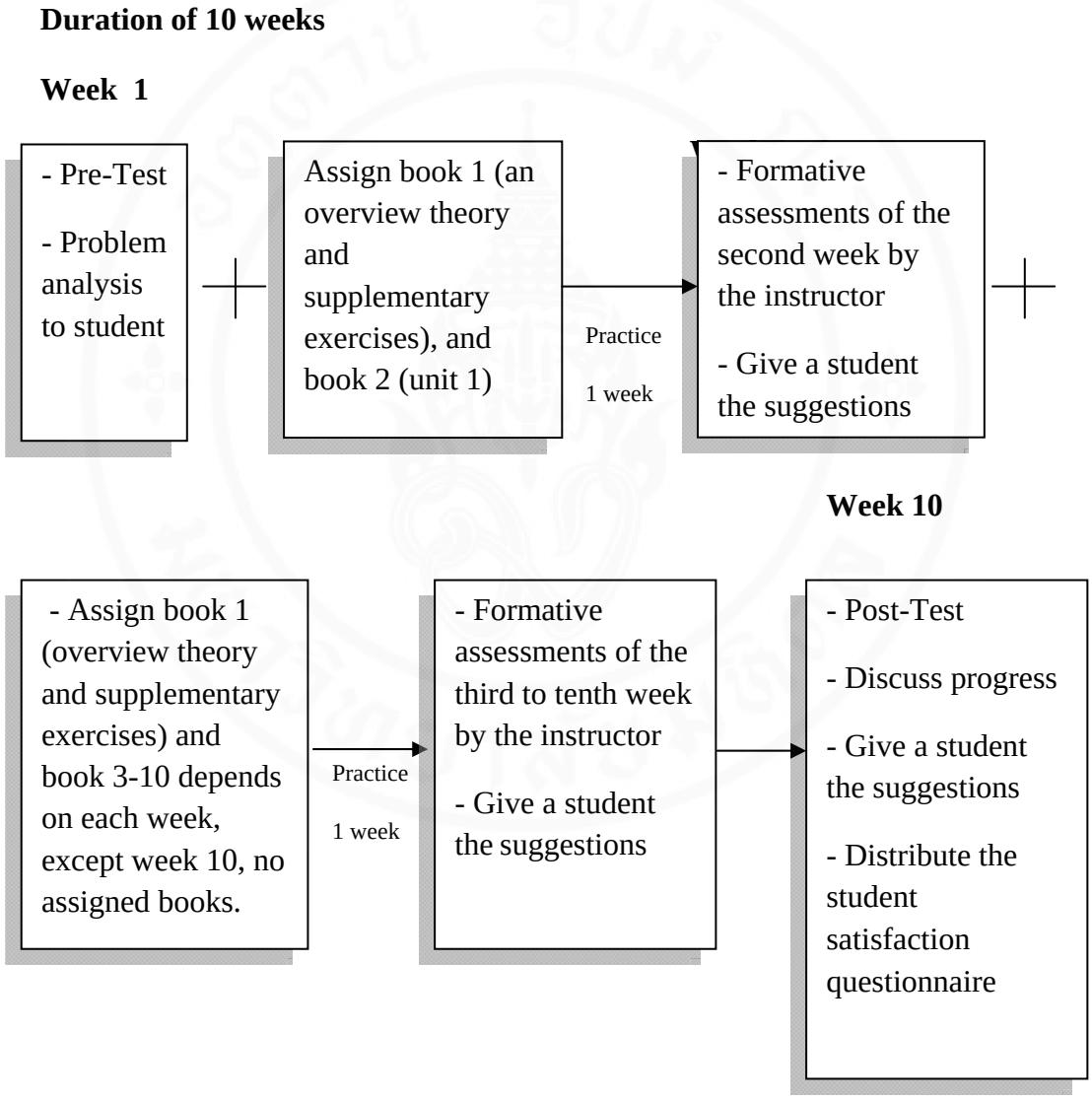

Figure 3.1: Collecting data process via the instructors

The data were collected by

1. Assessing the students' sight-reading competency by using four short pieces in the 1st piano lesson to serve as the pre-test assessments.

2. Analyzing the sight-reading problems to individual students.

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3. Assigning the exercise book: one book per week plus the overview book.

4. Assessing the students' sight-reading competency improvement by using two short pieces in the second piano lesson, and using three short pieces in the third to tenth piano lessons to serve as the formative assessments. If the student received the average score from each formative assessment lower than 70% of, the instructor had to explain the individual weakness in details and relevance, as well as assigned the relevant former book(s) to the student in order to review, but no re-examination in formative assessments.

5. Assessing the students' sight-reading competency achievement by using the same 4 short pieces as the pre-test in the tenth piano lesson to serve as the post-test assessments, discuss the students' progress, as well as giving the student the suggestion in order to develop sight-reading skill.

6. Distributing and collecting the student satisfaction questionnaire at the 10th week.

3.5 Analyzing data

The researcher designed a means in giving marks in each objective of the assessment for the instructors who participated in this experiment by focusing on the simple understanding of the assessments. After the experiment was finished, the researcher collected the data to analyze. These sections below will be presented in three steps of analyzing data: (1) A means in giving marks in each objective, (2) Giving weight of mark in the proportion form, and (3) The forms of the result presentations.

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(1) A means in giving marks in each objective
- Category 1: Note accuracy
- Category 2: Rhythm accuracy
- Category 3: Dynamic and articulation markings

(2) Giving weight of mark in the proportion form
- Category 1: Note accuracy
- Category 2: Rhythm accuracy
- Category 3: Dynamic and articulation markings

(3) The categories of the result presentations

3.1 The efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students*

- Compared the scores of formative tests and post-test
- Compared the scores of each category of the assessment of formative tests and post test

3.2 The average results of pre-test and post-test

- Compared the scores of pre-test and post-test
- Compared the scores of each category of the assessment of pre-test and post test

3.3 The students' satisfaction

Figure 3.2: Steps of the analyzing data

1. A means in giving marks in each objective

A means in giving marks in each objective of the assessment was ranged from 3, 2, and 1 which follows the criteria of rubric. The researcher divided the assessments into 3 categories: (1) Note accuracy, (2) Rhythm accuracy, and (3) Dynamic and articulation marks. Each objective of the assessment and a means in giving marks can be presented as following:

Category 1: Note accuracy

The category of the note accuracy assessment was divided into two main objectives, and each of the divided two main objectives was divided into two sub-objectives in order to explain a defect of sight-reading to the students. The category of note accuracy can be presented as follows:

Note Accuracy

(1) Note accuracy

(1.1) The accuracy of random note

(1.2) Overall note accuracy

(2) Key

(2.1) Note with sharp or flat signs follows key signature

(2.2) Ending with dominant (V) to tonic (I)

An establishing the criteria of the assessment in the objective of note accuracy

The researcher determined the range of marks in the assessment in the objective of note accuracy as follows:

Note Accuracy

(1) Note accuracy

(1.1) The accuracy of random note

The instructor specified 10 random notes in the sight-reading piece by pointing, and then the student played the random notes on the piano.

Table 3.1: The meaning of the mark in the accuracy of random note

Mark 3	Mark 2	Mark 1
Fluency playing with 1-2 wrong notes	A little of hesitation with 1-2 wrong notes	Hesitation with more than 3-more wrong notes

(1.2) Overall note accuracy

The researcher gave the examples of an assessment of overall note accuracy in the examples of an assessment. The criteria of mark level 3 and 2 were presented at the lowest case to assess each mark.

(2) Key

(2.1) Note with sharp or flat signs follows key signature

The researcher gave the examples of an assessment of note with sharp or flat signs follows key signature in the example reading score in order to

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be the examples of an assessment. The criteria of mark level 3 and 2 were presented at the lowest case to assess each mark.

(2.2) Ending with dominant (V) to tonic (I)

The researcher gave the examples of an assessment of ending with dominant (V) to tonic (I) in the example reading score in order to be the examples of an assessment. The criteria of mark level 3 and 2 were presented at the lowest case to assess each mark.

Category 2: Rhythm accuracy

The category of the rhythm accuracy assessment was divided into two main objectives which can be presented as follows:

Rhythm accuracy

(1) Rhythmic pattern accuracy

(2) Fluency of performance

An establishing the criteria of the assessment in the objective of Rhythm accuracy

The researcher determined the range of marks in the assessment in the objective of rhythm accuracy as follows:

(1) Rhythmic pattern accuracy

The researcher gave the examples of an assessment of rhythmic pattern accuracy in the example reading score in order to be the examples of an assessment. The criteria of mark level 3 and 2 were presented at the lowest case to assess each mark.

(2) Fluency of performance

The researcher gave the examples of an assessment of fluency of performance in the example reading score in order to be the examples of an assessment. The criteria of mark level 3 and 2 were presented at the lowest case to assess each mark.

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Category 3: Dynamic and articulation marks

The category of the dynamic and articulation markings assessment was divided into two main objectives which can be presented as follows:

Dynamic and articulation marks

(1) Dynamic marks

(2) Articulation marks

Establishing the criteria of the assessment in the objective of Dynamic and articulation markings

The researcher determined the range of marks in the assessment in the objective of rhythm accuracy as follows:

(1) Dynamic marking

The researcher gave the examples of an assessment of dynamic markings in the example reading score in order to be the examples of an assessment. The criteria of mark level 3 and 2 were presented at the lowest case to assess each mark.

(2) Articulation marking

The researcher gave the examples of an assessment of articulation markings in the example reading score in order to be the examples of an assessment. The criteria of mark level 3 and 2 were presented at the lowest case to assess each mark.

2. Giving weight of mark in the proportion form

The researcher collected the assessment forms from the participated instructors and then started the process of giving weight of mark in the proportion form in order to find the efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students*. Each category was weight by following the standard criteria of Trinity Guildhall examination 4:4:2 (Note accuracy: Rhythm accuracy: Dynamic and articulation). The researcher used this proportion to design the weight of mark which can be categorized into two types of transfer of weight: (1) without dynamic and articulation markings (unit 1-3), and (2) with

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dynamic and articulation markings (unit 4-9). By means of giving weight of mark of each type of transfer of weight is indicated as follows:

(1) Without dynamic and articulation markings (unit 1-3): Formative tests 1-3

Category 1: Note accuracy

This category was weight 50 of total 100 which was divided into two main topics. Each main topic was divided into two sub-topics.

Table 3.2: Weight of mark in Note accuracy in formative tests 1-3

Topic of the assessment	Mark 3	Mark 2	Mark 1
(1) Note accuracy			
(1.1) The accuracy of random notes	12.5	9	5
(1.2) Overall note accuracy	12.5	9	5
Total	**25**	**18**	**10**
(2) Key			
(2.1) Note with sharp or flat signs follows key signature	12.5	9	5
(2.2) Ending with dominant (V) to tonic (I)	12.5	9	5
Total	**25**	**18**	**10**

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Category 2: Rhythm accuracy

This category was weight 50 of total 100 which was divided into two main topics.

Table 3.3: Weight of mark in Rhythm accuracy in formative tests 1-3

Topic of the assessment	Mark 3	Mark 2	Mark 1
(1) Rhythmic pattern accuracy	12.5×2	9×2	5×2
Total	**25**	**18**	**10**
(2) Fluency of performance	12.5×2	9×2	5×2
Total	**25**	**18**	**10**

(2) With dynamic and articulation markings (unit 4-9): formative tests 4-9

Category 1: Note accuracy

This category was weight 40 of total 100 which was divided into two main topics. Each main topic was divided into two sub-topics.

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Table 3.4: Weight of mark in Note accuracy in formative tests 4-9

Topic of the assessment	Mark 3	Mark 2	Mark 1
(1) Note accuracy			
(1.1) The accuracy of random note	10	7	4
(1.2) Overall note accuracy	10	7	4
Total	**20**	**14**	**8**
(2) Key			
(2.1) Note with sharp or flat signs follows key signature	10	7	4
(2.2) Ending with dominant (V) to tonic (I)	10	7	4
Total	**20**	**14**	**8**

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Category 2: Rhythm accuracy

This category was weight 40 of total 100 which was divided into two main topics.

Table 3.5: Weight of mark in Rhythm accuracy in formative tests 4-9

Topic of the assessment	Mark 3	Mark 2	Mark 1
(1) Rhythmic pattern accuracy	10×2	7×2	4×2
Total	**20**	**14**	**8**
(2) Fluency of performance	10×2	7×2	4×2
Total	**20**	**14**	**8**

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Category 3: Dynamic and articulation markings

This category was weight 20 of total 100 which was divided into two main topics.

Table 3.6: Weight of mark in Dynamic and Articulation accuracy in formative tests 4-9

Topic of the assessment	Mark 3	Mark 2	Mark 1
(1) Dynamic markings	10	7	4
(2) Articulation markings	10	7	4
Total	**20**	**14**	**8**

3. The categories of the result presentations

The information of the experiment's results was presented in three categories:

3.1) Efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students*

Use the formula of the efficiency criterion of E_1: E_2

- Comparing the scores of formative tests and post-test**.**

- Comparing the average scores of each category of the assessment of formative tests and post-test.

$$E_1 = \frac{\sum X / N \times 100}{A}$$

$$E_2 = \frac{\sum Y / N \times 100}{B}$$

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E_1 means the efficiency of the process.

E_2 means the efficiency of the product.

X means the students' scores in the formative assessments.

Y means the students' score in the post-test assessments.

A means the total scores of the formative assessments.

B means the total scores of the post-test assessments.

N means the number of students.

3.2) Average results of pre-test and post-test

Use t-test to compare Two-related-samples tests between pre-test and post-test assessments to indicate an averaged sight-reading competency development of the sample population at statistically significant level 0.05.

- Comparing the scores of pre-test and post-test.
- Comparing the average scores of each category of the assessment of pre-test and post-test.

3.3) Students' satisfaction towards *A remedial piano sight-reading self-instructional package for intermediate piano students*.

Use descriptive statistics to analyze the student satisfaction questionnaire by mean ($\overline{X}$), and standard deviation (S.D.).

3.6 Statistics used for data analysis

1. Descriptive statistics: percentage, mean, and standard deviation.
2. Inferential statistics: paired-sample t-test.

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CHAPTER IV
RESULTS

The purposes of this research, *A remedial piano sight-reading self-instructional package for intermediate piano students,* were to 1) invent *A remedial piano sight-reading self-instructional package for intermediate piano students* 2) verify the efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students* following the efficiency criterion of 70/70, 3) compare the average results of pre-test and post-test, and 4) explore the students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students.* The statistics used to analyze the data were descriptive statistics: percentages, means, standard deviations; and inferential statistics: paired-sample t-test. The information of the experiment's results was presented in three categories:

4.1 The efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students.*

4.2 Comparison of pre-test and post-test.

4.3 Students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students*.

4.1 The efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students*

4.1.1 Comparison of the scores of formative tests and post-test

The scores from formative tests were shown in the table as follows:

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Table 4.1: The efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students* during the process (formative tests)

(n=23 students)

Measurement Tool	Full scores of each test	Minimum score	Maximum score	$\overline{X}$	S.D.
Formative 1	100	49.50	100.00	85.16	16.46
Formative 2	100	54.20	100.00	87.73	14.66
Formative 3	100	60.90	100.00	86.22	13.61
Formative 4	100	43.00	100.00	79.97	17.07
Formative 5	100	48.00	96.00	79.24	15.36
Formative 6	100	48.00	100.00	77.65	17.81
Formative 7	100	46.00	100.00	81.00	17.97
Formative 8	100	48.00	100.00	82.03	16.79
Formative 9	100	52.00	80.00	82.65	16.32
Total student's average score of 9 formative tests				**82.41**	**15.39**

According to Table 4.1, the formative test results received an average of 82.41, which was higher than the expected criteria of 70.

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The scores from post-test were shown in the table as follows:

Table 4.2: The efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students* after the process (post-test)

(n =23 students)

Measurement Tool	**Full score**	**Minimum score**	**Maximum score**	$\overline{X}$	**S.D.**
Post-test	100	61.00	100.00	84.63	14.42

According to Table 4.2, the post-test results received an average of 84.63 which was higher than the expected criteria of 70.

According to the above results, *A remedial piano sight-reading self-instructional package for intermediate piano students* after the process was verified the efficiency at 82.40/84.63, which was higher than the efficiency criteria at 70/70.

4.1.2 Comparison of the average scores of each category of the assessments of formative tests and post-test.

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Table 4.3: The average scores of each category of the assessments of formative tests

(n=23 students)

Category	Topic of the assessment	Full scores of each test	Minimum score	Maximum score	$\overline{X}$	S.D.
1.	Random notes	10.00	8.00	10.00	9.65	0.52
	Overall note accuracy	10.00	4.23	10.00	8.00	1.77
	Sharp or flat follows key signature	10.00	5.04	9.89	8.54	1.54
	Ending of dominant to tonic	10.00	4.24	9.78	8.06	1.79
2.	Rhythmic pattern	20.00	9.60	19.78	16.26	3.39
	Fluency	20.00	8.48	20.00	16.18	3.96
3.	Dynamic	10.00	4.00	9.50	6.88	2.10
	Articulation	10.00	4.00	10.00	8.07	2.31

According to Table 4.3, the average scores of each category of mostly assessments of formative tests were higher than 70%; except in category of the dynamic assessments was 6.88, which was lower than 70%.

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Table 4.4: The scores of each category of the assessments of post-tests

(n=23 students)

Category	Topic of the assessment	Full scores of each test	Minimum score	Maximum score	$\overline{X}$	S.D.
1.	Random note	10.00	8.50	10.00	**9.84**	0.38
	Overall note accuracy	10.00	4.00	10.00	**8.22**	1.95
	Sharp or flat follows key signature	10.00	4.80	10.00	**8.55**	1.70
	Ending of dominant to tonic	10.00	4.80	10.00	**8.52**	1.65
2.	Rhythmic pattern	20.00	10.50	20.00	**16.65**	3.04
	Fluency	20.00	8.00	20.00	**16.80**	3.98
3.	Dynamic	10.00	4.00	10.00	**7.89**	2.15
	Articulation	10.00	4.00	10.00	**8.15**	2.15
	Sum				**84.63**	14.42

According to Table 4.4, the average scores of each category of every assessment of post-tests were 84.63 higher than 70%. These successes strongly supported to the efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students* after the process (post-test), which were higher than 70%.

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4.2 Comparison of the scores of pre-test and post-test

Table 4.5: Pre-test and post-test results of *A remedial piano sight-reading self-instructional package for intermediate piano students*

(n =23 students)

Measurement Tool	Full score	Minimum score	Maximum score	$\overline{X}$	S.D.	t-test	p
Pre-test	100	40.00	69.30	**54.90**	10.05	16.43	0.00
Post-test	100	61.00	100.00	**84.63**	14.42		

*p<0.05

According to the Table 4.5, the assessment results of post-test was significantly higher than pre-test at the statistically significant effect 0.05 (p<0.05). The hypothesis of this research was approved.

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Table 4.6: The average scores of each category of the assessments of pre-test

(n =23 students)

Topic of the assessment	**Full scores of each test**	**Minimum score**	**Maximum score**	$\overline{X}$	**S.D.**
Random notes	10.00	4.00	10.00	**7.83**	2.15
Overall note accuracy	10.00	4.00	9.30	**5.32**	1.61
Sharp or flat follows key signature	10.00	4.00	9.30	**6.03**	1.87
Ending of dominant to tonic	10.00	4.00	10.00	**6.36**	1.91
Rhythmic pattern	20.00	6.30	15.50	**10.38**	2.57
Fluency	20.00	5.50	17.00	**10.04**	2.81
Dynamic	10.00	4.00	6.30	**4.27**	0.63
Articulation	10.00	4.00	7.80	**4.66**	1.24
Sum				**54.90**	10.05

According to Table 4.6, the students received the highest average score of random notes at 7.83, as well as the lowest average score of dynamic at 4.27.

Random notes was only one category of the assessments which the students received the scores higher than 70% in pre-test assessment.

Similar to Table 4.4, the students received the highest average score of random note at 9.84 in post-test results, whereas the lowest average score of dynamic at 7.89.

In conclusion, the average scores of each category of the assessment of the post-test results were higher than those of the pre-test results.

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4.3 Students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students*

4.3.1 General information

Table 4.7: The general information of the intermediate piano students

(n =23 students)

Topic	Details	Frequency	Percentage
Age (year-old)	10-12	1	4.3%
	13-15	8	34.8%
	16-18	3	13.0%
	19 up	11	47.8%
Average practicing time per 1 book (hour)	1	11	47.8%
	2	6	26.1%
	3	3	13.0%
	4	2	8.7%
	5 up	1	4.3%
Self assessment in discipline of practicing	Very good	1	4.3%
	Good	16	69.6%
	Should be improved	6	26.1%
Benefit of A remedial piano sight-reading self-instructional package for intermediate piano student in sight-reading skill development	Much	19	82.6%
	Medium	4	17.4%
	Less	0	0.0%

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According to Table 4.7, 47.8% of the students were 19 years old or older. 47.8% of the students spent 1 hour for practicing, 69.6% of the students evaluated themselves had good discipline in practicing, as well as 82.6% students thought that *A remedial piano sight-reading self-instructional package for intermediate piano student* helped them in sight-reading skill development.

4.3.2 Students' satisfaction

Table 4.8: The students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students*

(n=23 students)

Topic	$\overline{X}$	**S.D.**	**Level of Satisfaction**
1. Benefit of pitch reading and locating **without** dynamic and articulation markings	4.39	0.50	High
2. Benefit of pitch reading and locating **with** dynamic and articulation markings	4.17	0.72	High
3. Benefit of the exercise arranging in relative keys	4.35	0.78	High
4. Benefit of the arranging of similar character of pieces in each chapter	4.43	0.73	High
5. Benefit of providing guidelines to count the rhythmic patterns	4.65	0.57	Highest
6. Benefit of the rhythmic pattern exercises and guideline to count the rhythmic patterns	4.48	0.59	High
7. Benefit of fingering guideline	3.83	0.89	Average
8. Benefit of sequencing thinking cards	4.30	0.82	High
9. Suitability of the arrangement of the exercises of pitch reading and locating from easiness to difficulty	4.57	0.66	Highest
10. Suitability of the arrangement of the exercises from simple keys to more complicated keys	4.39	0.78	High
11. Suitability of the pieces with similar character in each chapter	4.09	0.73	High
12. Suitability of the guideline of rhythmic pattern counting	4.43	0.59	High

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Table 4.8 (CONT.): The students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students*

Topic	$\overline{X}$	S.D.	Level of Satisfaction
13. Suitability of the rhythmic pattern exercises	4.52	0.59	Highest
14. Suitability of the fingering guideline	3.96	0.77	Average
15. Suitability of the explanation in sequencing thinking cards	4.17	0.89	High
16. Suitability of the explanation in books	4.17	0.99	High
17. Suitability of the difficulty of exercise in books compare with the difficulty of pieces for test	4.22	0.80	High
18. Suitability of topic of the assessments	4.17	0.72	High
19. Suitability of staffs' sizes	4.70	0.64	Highest
20. Suitability of texts' sizes	4.65	0.57	Highest
21. Suitability of book design	4.74	0.54	Highest
22. Suitability of duration of 10 weeks: 1 book per week	4.17	0.89	High
Sum	4.35	0.24	High

According to Table 4.8 shows that the students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students* was at overall high level ($\overline{X}$ =4.35, S.D. = 0.24). Ranked in order, the first, the suitability of book design ($\overline{X}$ =4.74, S.D. = 0.54), the second, the suitability of staffs' sizes ($\overline{X}$ =4.70, S.D. = 0.64), and the last, benefit of fingering guideline ($\overline{X}$ =3.83, S.D. = 0.89).

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CHAPTER V
CONCLUSION, DISCUSSION, AND RECOMMENDATION

The purposes of this experimental research *A remedial piano sight-reading self-instructional package for intermediate piano students* were to 1) invent *A remedial piano sight-reading self-instructional package for intermediate piano students*, 2) verify the efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students* following the efficiency criterion of 70/70, 3) compare the average results of pre-test and post-test, and 4) explore the students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students*. The assessments in sight-reading competency in this experiment consisted of pre-test assessment, formative assessments, and post-test assessments by using the created research instruments. The statistics used to analyze the data were descriptive statistics: percentages, means, standard deviations; and inferential statistics: paired-sample t-test with a significance level of 0.05.

5.1 Conclusion

The conclusions of the study were as follows:

(1) *A remedial piano sight-reading self-instructional package for intermediate piano students* was successfully invented.

(2) The efficiency of *A remedial piano sight-reading self-instructional package for intermediate piano students* was 82.41/84.63, as well as the average scores of mostly categories of the assessments was higher than 70%, except the assessments of dynamic in formative assessment only (68.77%). However, the average scores of each category of the post-test assessment were higher than 70%.

(3) The average score of the post-test was significantly higher than that of the pre-test at a statistically significant level 0.05.

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(4) The students' satisfaction with *A remedial piano sight-reading self-instructional package for intermediate piano students* was at the high level. The item of the suitability of book design was perceived the highest score of satisfaction, whereas, the item of the benefit of fingering guideline was perceived the lowest score of satisfaction.

5.2 Discussion

A remedial piano sight-reading self-instructional package for intermediate piano students has the effectiveness score 82.41/84.63, as well as the scores of each category of the assessments of both formative tests and post-test were higher than 70%, except the assessments of dynamic marks (68.77%) in formative test. However, the average result of post-test was higher than that of pre-test at the statistically significant level 0.05, as well as the scores of each category of the assessments of post-test was higher than 70%.

The success of the results will be discussed in four categories as follows:

(1) Success of note accuracy remediation.

(2) Success of rhythm accuracy remediation.

(3) Success of dynamic and articulation marks remediation.

(4) Success of self-instructional package.

(1) Success of note accuracy remediation

The experiment results of formative tests and post-tests show that the students received the average scores of Note accuracy category higher than 70%. The reasons can be discussed into three aspects as follows:

The first aspect, *A remedial piano sight-reading self-instructional package for intermediate piano students* was designed to be consisted of the pitch reading and pitch position section in order to solve the problem of the kinesthetic sense or sense of touch which is very important sense to the sight-reader (Richman, 1986; Udtaisuk, 2005).

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The second aspect, *A remedial piano sight-reading self-instructional package for intermediate piano students* was designed to be consisted of fingering

number as a choice for some students who desired in order to solve the problems in thinking fingering during sight reading. Giving fingering guidance helped some students who had problems in fingering decision because the skilled piano sight-readers will perform music with both higher accuracy and consistency in fingering pattern than less skilled piano sight-reader (Sloboda, Clarke, Parncutt, & Raekallio, 1998).

Finally, *A remedial piano sight-reading self-instructional package for intermediate piano students* consisted of the section of scales and cadence in order to support the sense of hearing to the students by guiding the students to listen to the relationship of each note when playing scales and cadence carefully during practice sight-reading in order to help them to perceive the deliberate sense of key or sense of tonality. To integrate knowledge between scales, cadences, and piece helped the students to perceive the sense of key. The student developed the auditory feedback to predict and identify the mistakes for future correction in the next familiar part during sight-reading playing (Lehmann & McArthur, 2002). To support the knowledge integration, thinking sequence cards were included.

(2) Success of rhythm accuracy remediation

The experiment results of formative tests and post-tests show that the students received the average scores of Rhythm accuracy category higher than 70%. The reasons can be discussed into two aspects as follows:

The first aspect, *A remedial piano sight-reading self-instructional package for intermediate piano students* was designed to be consisted of rhythmic pattern sections by guiding the students to clap their hands in the similar rhythmic pattern in each episode of chapter 1-3, as well as practice sight-reading by playing the short pieces which have familiar rhythmic pattern in each episode. The researcher put the number to help the students to count the rhythm. All of the remediation were accordance with the formal education (1) Aural-based training, (2) Pattern prominence in music reading, (3) Analytical thinking, and (4) Important movement in music reading (Udtaisuk, 2005).

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The other aspect, *A remedial piano sight-reading self-instructional package for intermediate piano students* consisted of the familiarity of the piece in

each chapter in each unit in order to help the students to observe, memorize, and recall by using short-term and long-term memory. This remediation raised the students' ability to memorize and recall written music.

(3) Success of dynamic and articulation marks remediation

The experiment results of formative tests and post-tests show that the students received the average scores of Dynamic and articulation accuracy category higher than 70% mostly, except dynamic category of the formative tests was 68.8%. The reasons can be discussed as follows:

A remedial piano sight-reading self-instructional package for intermediate piano students was designed to guide the students to practice pitch reading with dynamic and articulation marks in unit 4-9, as well as practice sight-reading by playing the short pieces which have dynamic and articulation marks in unit 4-9. The students needed to practice this section because they hardly have had the ability to perform these marks at sight-reading time. Hence, they needed to practice by grasping both note and all marks in order to support the primary level of sound component which relates to musical treasure including articulation, dynamics, and tempo. (Udtaisuk, 2005).

For the error of 68.8% of the dynamic category of the formative tests, it occurred due to there were 26 pieces of the formative tests. These formative tests were divided into two pieces only the second week assessments, besides there were divided into three pieces every-week assessments. The students mostly had to perform three pieces connected, they were tired. Usually, the dynamic and articulation marks are the last topic to pay attention during sight-reading, if the students are tired, they will have inferior skill. In this experiment, the dynamic marks were difficult to pay attention to because they were farther from the note-head than those of the articulation marks. However, the students received the78.9% of the dynamic category in the post-tests.

(4) Success of self-instructional package

The students' satisfaction towards *A remedial piano sight-reading self-instructional package for intermediate piano students* was at high level. The general information showed the students' strong thought towards the benefit of *A remedial*

piano sight-reading self-instructional package for intermediate piano students in sight-reading skill development.

The first three ranks of high satisfactions and low satisfaction will be discussed as follows:

The first three-ranks of high satisfactions:

1) The suitability of book design received the highest satisfaction.

This self-instructional package was divided into 10 books. They consisted of the similar patterns in each book, except book 10 which was supplementary book. The students were familiarized with these patterns.

2) The suitability of staffs' sizes received the second satisfaction.

The scores in this self-instructional package were typed by the computer program "Sibelius." The staffs' sizes were 7-7.5. The students were satisfied by the easy-reading staff's sizes.

3) The benefit of providing guidelines to count the rhythmic patterns, and the suitability of text size received the third highest satisfaction.

Firstly, this self-instructional package presented the guidelines to count the rhythmic patterns in details. It helped the students to solve the counting rhythm problems by themselves.

Secondly, the texts' sizes used in this self-instructional package were Times New Roman 12 and 14. The students were satisfied by the simple texts' sizes.

The first three-ranks of low satisfactions:

1) The benefit of fingering guideline was received the lowest satisfaction

2) The suitability of the fingering guideline received the second lowest satisfaction.

These first two lowest satisfactions were related with fingering, because when doing sight-reading, fingering number might be ignored. However, these satisfactions were still in medium level ($\overline{X}$ = 3.83, S.D = 0.89, and $\overline{X}$ = 3.96, S.D. = 0.77).

3) The suitability of the pieces with similar character in each chapter.

Although it was presented as the third lowest satisfaction, however, this satisfaction was still in high level ($\overline{X}$ = 4.09, S.D. = 0.73).

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5.3 Recommendations

5.3.1 Recommendations for further research

(1) The pieces in the instructional package should be interesting and joyful in order to motivate the students. Actually, joy is the true benefit of sight-reading.

(2) According to this research results, dynamic marks should be separated to remedial.

5.3.2 General recommendations

(1) *A remedial piano sight-reading self-instructional package for intermediate piano students* should be brought to experiment with other sample population.

(2) Other levels of the piano sight-reading instructional packages should be invented.

(3) Other instrument sight-reading instructional packages should be invented.

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APPENDICES

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APPENDIX A
LIST OF THE EXPERTS

1. Mr. Pawatchai Suwankangka
   Piano instructor at Trinity Music Institute and Chintakarn Music Institute
2. Mr. Poonsant Tainchaivanich
   Piano instructor at College of music, Mahidol university
3. Miss Sornsuang Tangsinmonkong
   Piano instructor at College of music, Mahidol university
4. Mr. Tharach Wuttiwan
   Piano instructor at College of music, Mahidol university
5. Miss Trajit Chaitongkao
   Director of Sansiang music school, Samutsakorn

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APPENDIX B

QUALITY EVALUATION FORM FOR THE EXPERT

The appropriateness of the concepts to create the learning objectives

No.	Detailed	Expert Opinion Scores					IOC
		A	B	C	D	E	
1.	The ability to play note accuracy is the necessary ability in piano sight-reading.	1	1	1	1	1	1.00
2.	The ability to play rhythm accuracy is the necessary ability in piano sight-reading	1	1	1	1	1	1.00
3.	The abilities to play the dynamic and articulation marks accuracy with notes are the necessary abilities in piano sight-reading.	1	1	1	1	1	1.00

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The appropriateness of the created concept of lesson activities

No.	Detailed	Expert Opinion Scores					IOC
		A	B	C	D	E	
1.	*A remedial piano sight-reading self-instructional package for intermediate piano students* provides step-by-step guideline to practice.	1	1	1	1	1	1.00
2.	*A remedial piano sight-reading self-instructional package for intermediate piano students* emphasizes the discipline in sight-reading practicing in order to remedial the students' sight-reading ability.	1	1	1	1	1	1.00

The appropriateness of the concepts to created the learning contents

No.	Detailed	Expert Opinion Scores					IOC
		A	B	C	D	E	
1.	To arrange the thinking sequencing effects to sight-reading performance.	1	1	1	1	1	1.00
2.	To practice the pitch reading and pitch position help the sight-reading performance.	1	1	1	1	1	1.00
3.	To practice in pitch reading and pitch position with dynamic and articulation marks help the sight-reading	1	1	1	1	1	1.00

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	performance.						
4.	To arrange the key orderly helps the students to recognize the key signatures.	1	1	1	1	1	1.00
5.	To be able to recognize the key signatures brings more accuracy in playing note with sharp or flat follows key signature.	1	1	1	1	1	1.00
6.	To explain the means in counting the rhythmic pattern brings more understanding of the rhythmic pattern.	1	1	1	1	1	1.00
7.	To arrange the similar style of the pieces in the same episode of the exercises effects to the fluency improvement during sight-reading performance.	1	1	1	1	1	1.00
8.	To suggest the fingering numbers helps the more fluency during sight-reading performance.	1	1	1	1	1	1.00
9.	To arrange the first 3 units without dynamic and articulation marks is the means to reduce the complexity of the contents, and helps the student to remedial the basic of sight-reading skill.	1	1	1	1	1	1.00

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The appropriateness of the congruence between the created concepts of the lesson activities and the learning contents

No.	Detailed	Expert Opinion Scores					IOC
		A	B	C	D	E	
1.	*A remedial piano sight-reading self-instructional package for intermediate piano students* is congruent to the concept of thinking sequencing.	1	1	1	1	1	1.00
2.	The exercises in unit 1-3 are congruent to the concept of pitch reading and pitch position.	1	1	1	1	1	1.00
3.	The exercises in unit 4-9 are congruent to the concept of pitch reading and pitch position with dynamic and articulation marks.	1	1	1	1	1	1.00
4.	*A remedial piano sight-reading self-instructional package for intermediate piano students* is congruent to the key order.	1	1	1	1	1	1.00
5.	*A remedial piano sight-reading self-instructional package for intermediate piano students* is congruent to the remediation of key signature recognition.	1	1	1	1	1	1.00
6.	The exercises in unit 1-3 are congruent to the rhythmic pattern explanation.	1	1	1	1	1	1.00

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7.	*A remedial piano sight-reading self-instructional package for intermediate piano students* is congruent to the arrangement of similar style of the pieces.	1	1	1	1	1	1.00
8.	*A remedial piano sight-reading self-instructional package for intermediate piano students* is congruent to the fingering suggestions.	1	1	1	1	1	1.00
9.	The exercises in unit 1-3 are congruent to the reduction of the complexity of the contents and help the student to remedial the basic of sight-reading skill.	1	1	1	1	1	1.00

The appropriateness of the media

No.	Detailed	Expert Opinion Scores					IOC
		A	B	C	D	E	
1.	The media is congruent to the learning objectives, content, and learning activities.	1	1	1	1	1	1.00
2.	The numbers of exercises are suitability for remedial the sight-reading skill.	0	1	1	1	1	0.80
3.	Referring to the standard of Trinity College London and ABRSM supports the effectives of *A remedial piano sight-reading self-instructional package for intermediate piano students.*	1	1	0	1	1	0.80

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The appropriateness of the assessments

No.	Detailed	Expert Opinion Scores					IOC
		A	B	C	D	E	
1.	The assessments are congruent to the learning objectives, contents, and learning activities	1	1	1	1	1	1.00
2.	To provide the assessment example helps the instructors to understand of the rubric criteria.	1	1	1	1	1	1.00

The appropriateness of the pieces in pre/post-tests

No.	Detailed	Expert Opinion Scores					IOC
		A	B	C	D	E	
1.	Pre/post test no.1	1	1	1	1	1	1.00
2.	Pre/post test no.2	1	1	1	1	1	1.00
3.	Pre/post test no.3	1	1	1	1	1	1.00
4.	Pre/post test no.4	1	1	1	1	1	1.00

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The appropriateness of the pieces in formative tests

No.	Detailed	Expert Opinion Scores					IOC
		A	B	C	D	E	
1.	2nd week: formative test no.1	0	1	1	1	1	0.80
2.	2nd week: formative test no.2	0	1	1	1	1	0.80
3.	3rd week: formative test no.1	0	1	1	1	1	0.80
4.	3rd week: formative test no.2	0	1	1	1	1	0.80
5.	3rd week: formative test no.3	0	1	1	1	1	0.80
6.	4th week: formative test no.1	0	1	1	1	1	0.80
7.	4th week: formative test no.2	0	1	1	1	1	0.80
8.	4th week: formative test no.3	0	1	1	1	1	0.80
9.	5th week: formative test no.1	1	1	1	1	1	1.00
10.	5th week: formative test no.2	0	1	1	1	1	0.80
11.	5th week: formative test no.3	0	1	1	1	1	0.80
12.	6th week: formative test no.1	1	1	1	1	1	1.00
13.	6th week: formative test no.2	1	1	1	1	1	1.00
14.	6th week: formative test no.3	1	1	1	1	1	1.00
15.	7th week: formative test no.1	1	1	1	1	1	1.00
16.	7th week: formative test no.2	1	1	1	1	1	1.00
17.	7th week: formative test no.3	1	1	1	1	1	1.00
18.	8th week: formative test no.1	0	1	1	1	1	0.80

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19.	8th week: formative test no.2	1	1	1	1	1	1.00
20.	8th week: formative test no.3	1	1	1	1	1	1.00
21.	9th week: formative test no.1	0	1	1	1	1	0.80
22.	9th week: formative test no.2	0	1	1	1	1	0.80
23.	9th week: formative test no.3	0	1	1	1	1	0.80
24.	9th week: formative test no.1	1	1	1	1	1	1.00
25.	9th week: formative test no.2	1	1	1	1	1	1.00
26.	9th week: formative test no.3	0	1	1	1	1	0.80

The appropriateness of the general information

No.	**Detailed**	**Expert Opinion Scores**			**IOC**
		A	**B**	**C**	
1.	Age range	1	1	1	1
2.	Average practicing time per 1 book	1	1	1	1
3.	Self assessment in discipline of practicing	0	1	1	0.67
4.	*Benefit of A remedial piano sight-reading self-instructional package for intermediate piano student* in sight-reading skill development	1	0	1	0.67

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The appropriateness of the students' satisfaction questionnaire

Topic	Detailed	Expert Opinion Scores			IOC
		A	B	C	
The appropriateness of the students' satisfaction of the benefit of content arrangement	1. Benefit of pitch reading and locating **without** dynamic and articulation markings	1	1	1	1
	2. Benefit of pitch reading and locating **with** dynamic and articulation markings	0	1	1	0.67
	3. Benefit of the exercise arranging in relative keys	1	1	1	1
	4. Benefit of the arranging of similar character of pieces in each chapter	1	1	1	1
	5. Benefit of providing guidelines to count the rhythmic patterns	1	1	1	1
	6. Benefit of the rhythmic pattern exercises and guideline to count the rhythmic patterns	1	1	1	1
	7. Benefit of fingering guideline	1	1	1	1
	8. Benefit of sequencing thinking cards	1	1	1	1
The appropriateness of the students' satisfaction of the suitability of	9. Suitability of the arrangement of the exercises of pitch reading and locating from easiness to difficulty	1	1	1	1
	10. Suitability of the arrangement of the exercises from simple keys to more complicated keys	1	1	1	1
	11. Suitability of the pieces with similar character in each sub-chapter	1	1	1	1
	12. Suitability of the guideline of rhythmic pattern counting	1	1	1	1
	13. Suitability of the rhythmic pattern exercises	1	1	1	1
	14. Suitability of the fingering guideline	1	1	1	1

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the content	15. Suitability of the explanation in sequencing thinking cards	1	1	1	1
	16. Suitability of the explanation in books	1	1	1	1
	17. Suitability of the difficulty of exercise in books compare with the difficulty of pieces for test	1	1	1	1
	18. Suitability of topic of the assessments	1	1	1	1
The appropriateness of the students' satisfaction of the suitability of the self-instructional package	19. Suitability of staffs' size	0	1	1	1
	20. Suitability of texts' size	1	1	1	1
	21. Suitability of book design	1	1	1	1
	22. Suitability of duration of 10 weeks: 1 book per week	0	1	1	0.67

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APPENDIX C
TEACHER'S HANDBOOK

Objectives of *A remedial piano sight-reading self-instructional package for intermediate piano students*

1. To improve the students sight-reading ability with note accuracy.
2. To improve the students sight-reading ability with rhythm accuracy.
3. To improve the students sight-reading ability with dynamic and articulation markings.

Expected benefits

1. The students will be improved sight-reading ability following the objectives.
2. The students are able to analyze the own strong and weak point in sight reading ability, and understand how to develop own sight-reading skill later.

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The table of problems in knowledge integration

Topic	**Problems**
Key	Although the students can specify the key or not, they always ignore the sharp or flat sign from the key signature part. Moreover, some students cannot perceive the wrong sense of mistaken key.
Rhythm & Beat	Some problems in the rhythmic pattern reading might come from the misunderstanding in rhythmic pattern or time signature, the inability to perform in a real time, or the inability to keep a steady beat or tempo.
Dynamic and articulation marks	Although they can specify the meaning of dynamic and articulation marks easily, they hardly have the ability to perform these marks at sight-reading time.
Pitch reading and pitch position	Some intermediate piano students still have problems in pitch reading and specifying the pitch position on keyboard.
Fingering	Problem in thinking fingering during sight reading is one of the problem's causes in sight-reading failure. Giving fingering guideline will help the reader who has problem in fingering decision.
Piece overview	One of the problems from a lack of piece overview observation is students will bother the musical continuation by extremely trying to perfect the pieces.

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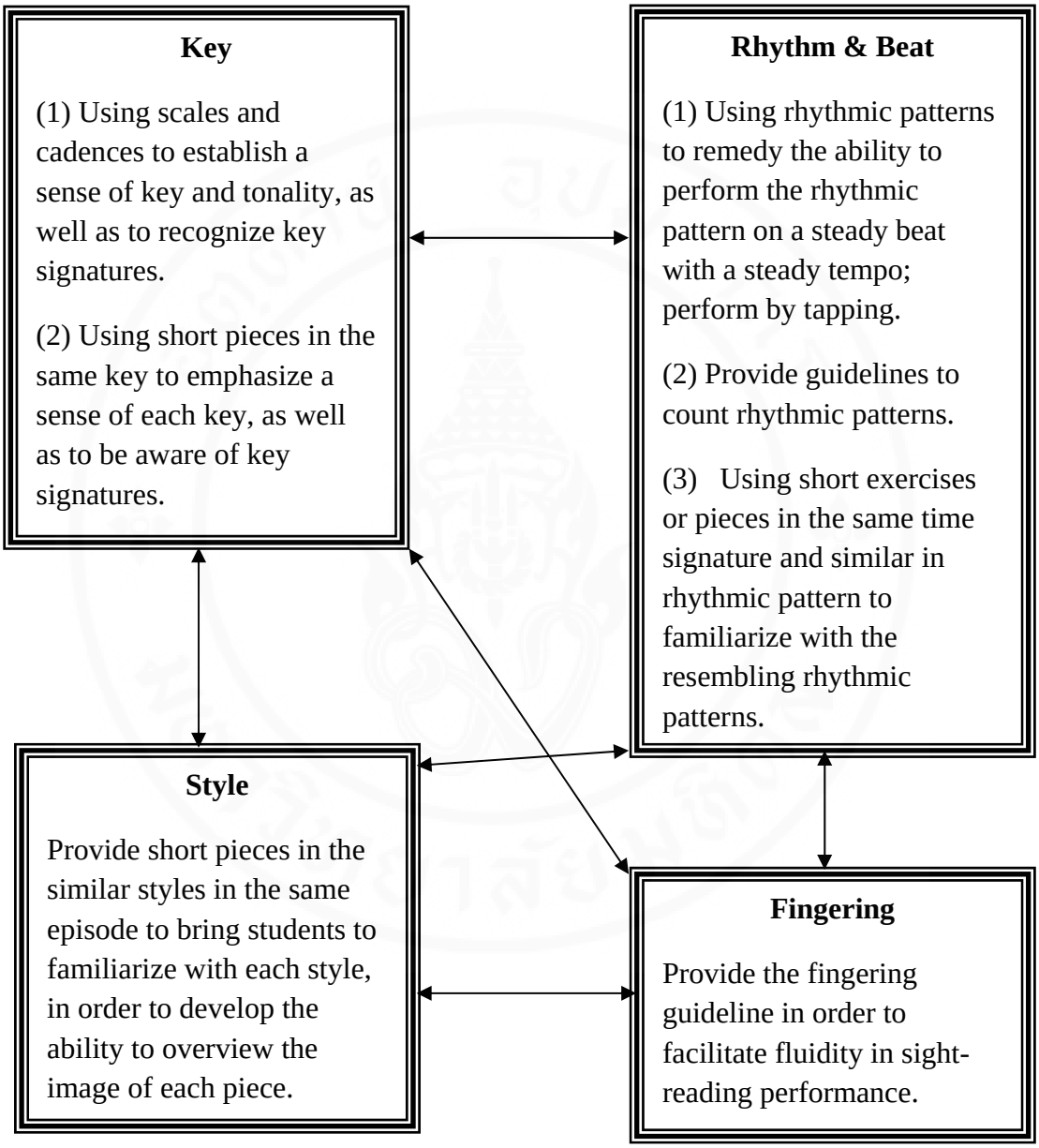
Solution: systematic classifications and systematic integrated knowledge.



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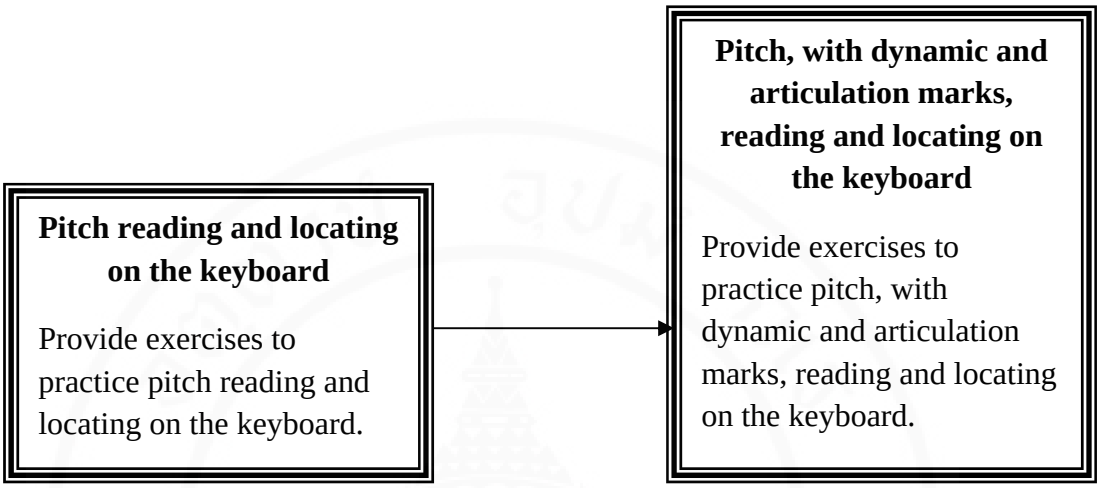
Solution: specific independent problem remedie



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The course schedule

The duration for using *A remedial piano sight-reading self-instructional package for intermediate piano students* is 10 connected weeks.

Week	Events
1	Pre-test/ Teacher explanation/ Distribute the supplementary book and unit 1
2	Formative test 1/ Teacher explanation/ Distribute unit 2
3	Formative test 2/ Teacher explanation/ Distribute unit 3
4	Formative test 3/ Teacher explanation/ Distribute unit 4
5	Formative test 4/ Teacher explanation/ Distribute unit 5
6	Formative test 5/ Teacher explanation/ Distribute unit 6
7	Formative test 6/ Teacher explanation/ Distribute unit 7
8	Formative test 7/ Teacher explanation/ Distribute unit 8
9	Formative test 8/ Teacher explanation/ Distribute unit 2
10	Formative test 9/ Teacher explanation/ Post-test/ Teacher conclusion

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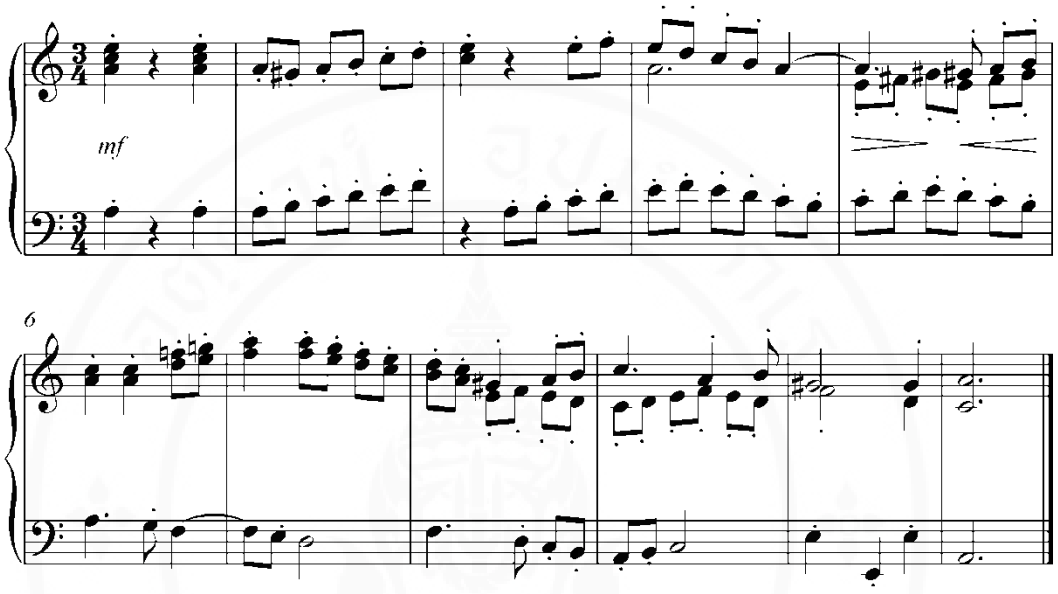
Pieces for pre-test and post-test

Piece for pre-test and post-test No. 1



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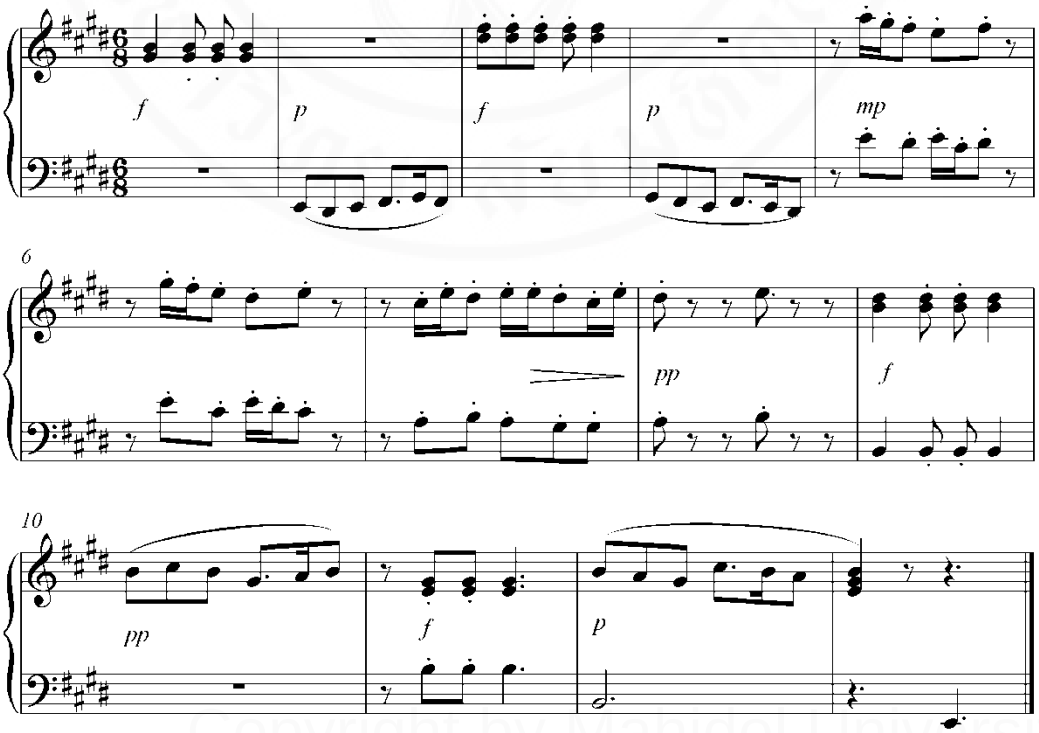

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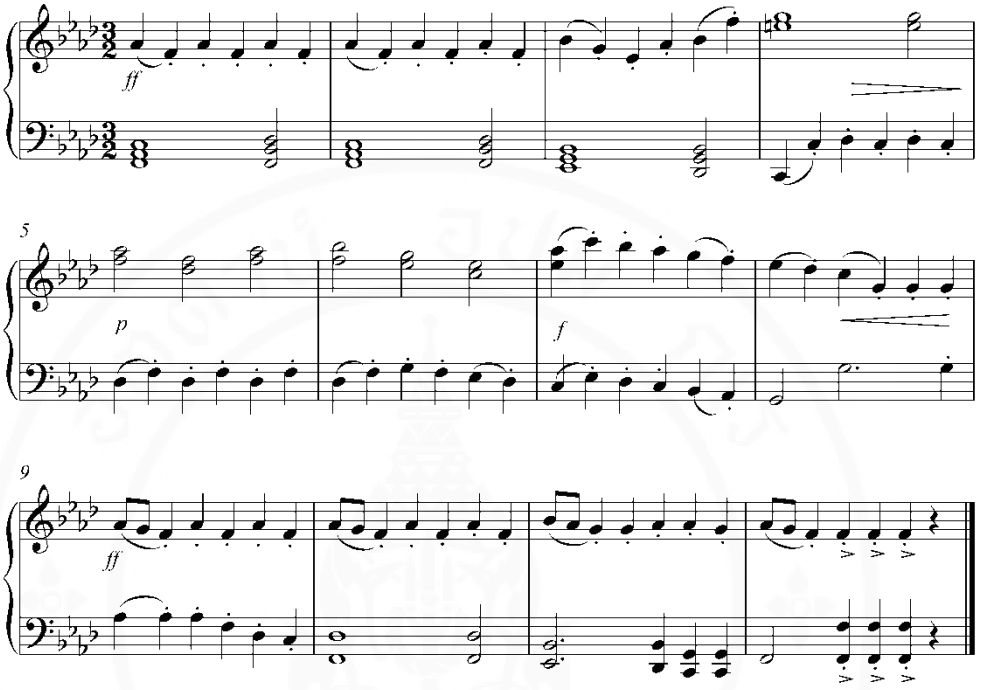
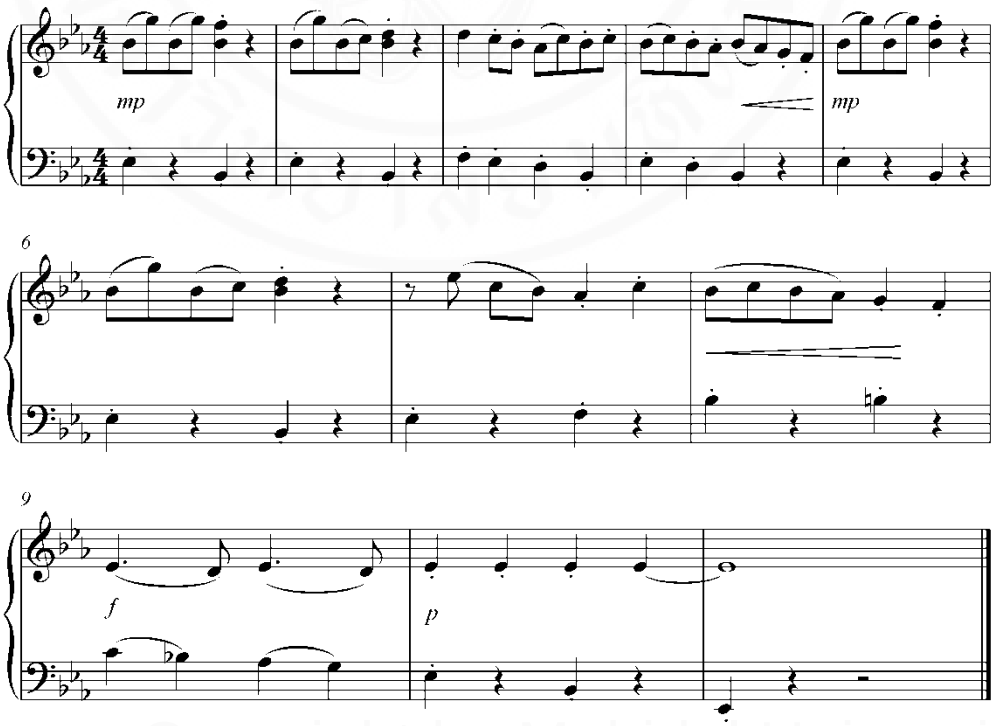
Piece for pre-test and post-test No. 3



Piece for pre-test and post-test No. 4



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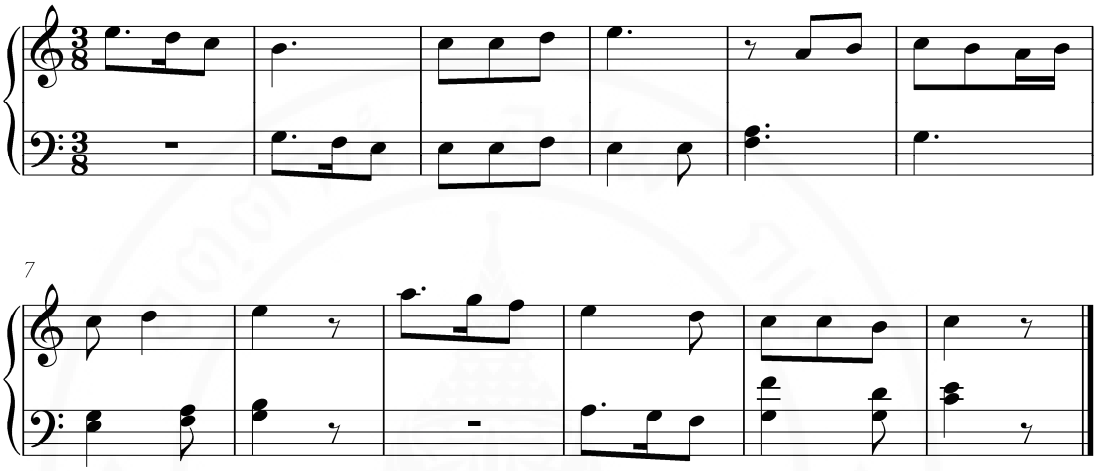
Pieces for formative test

Week 2

No. 1



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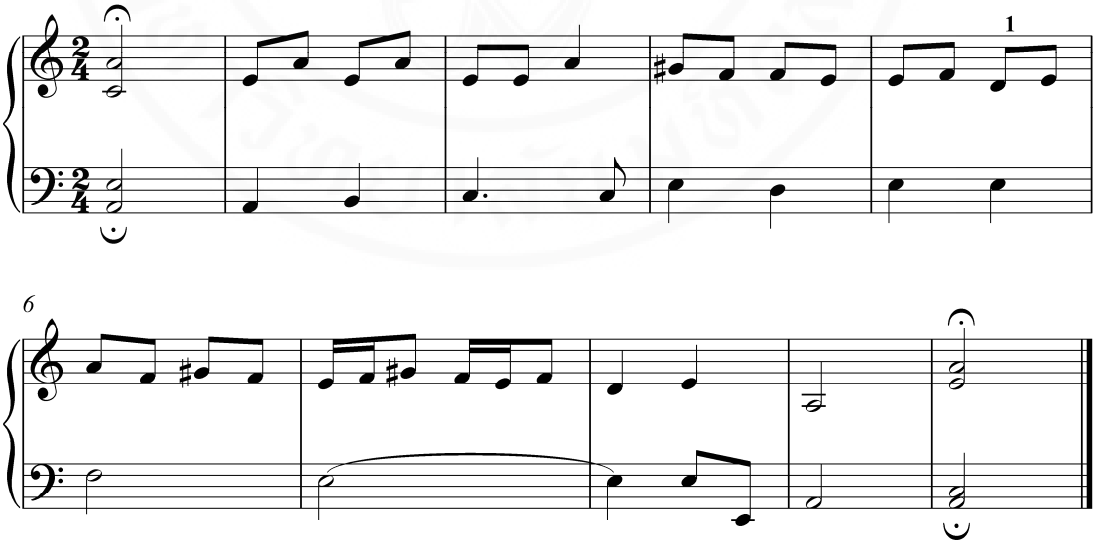

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Week 3

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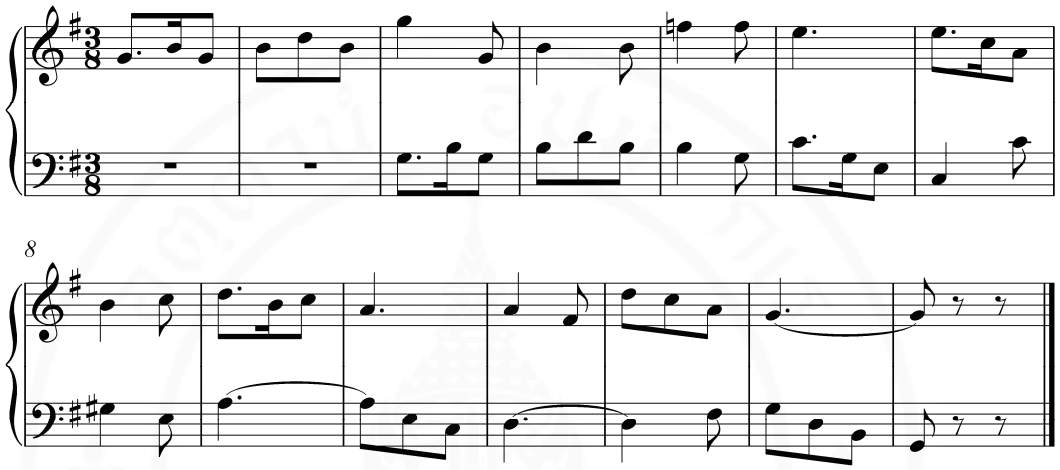

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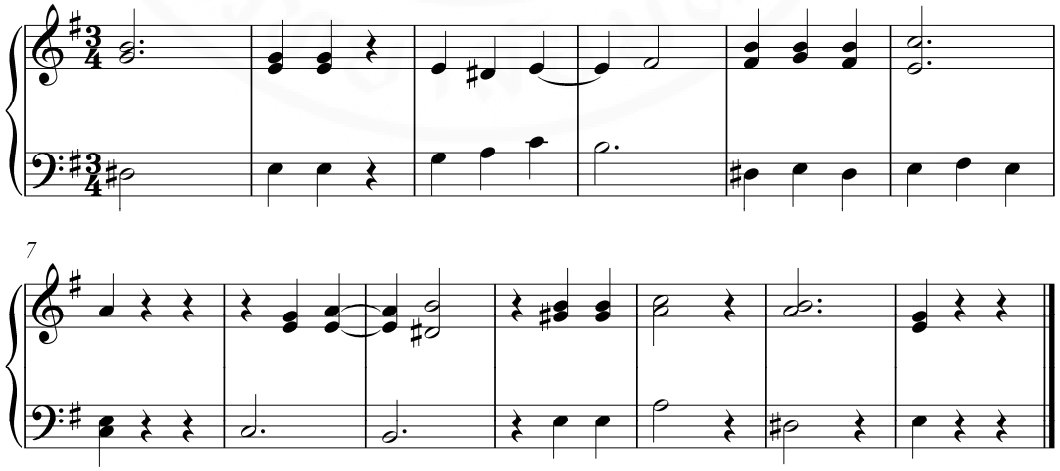

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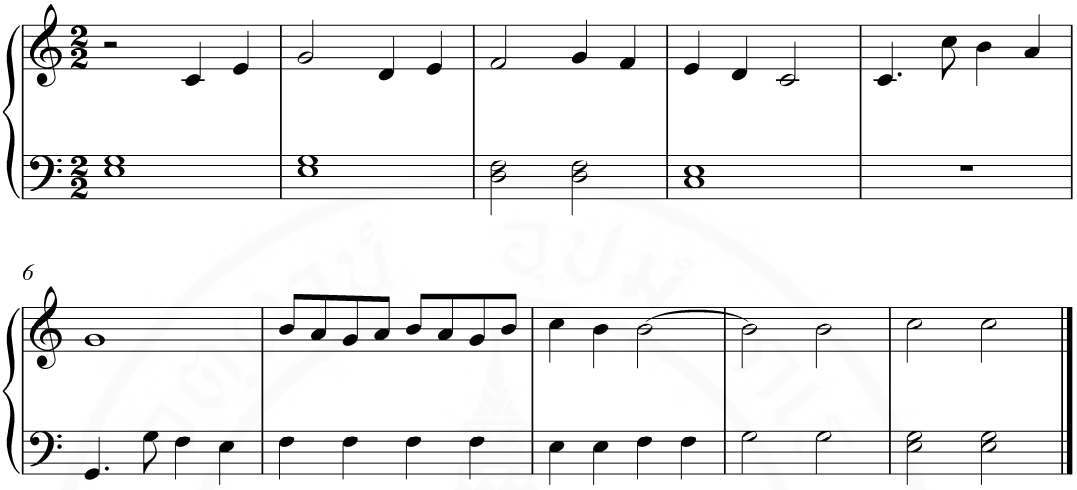

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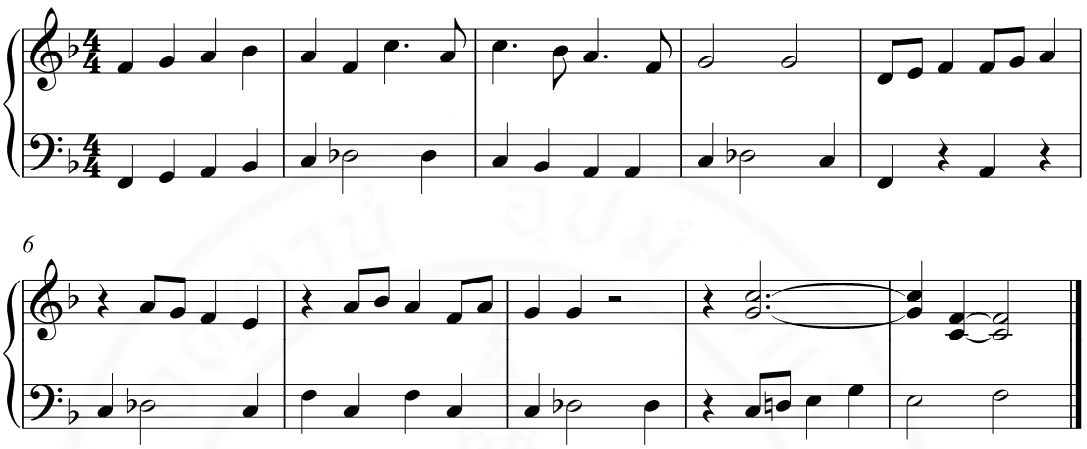
Week 4

No. 1



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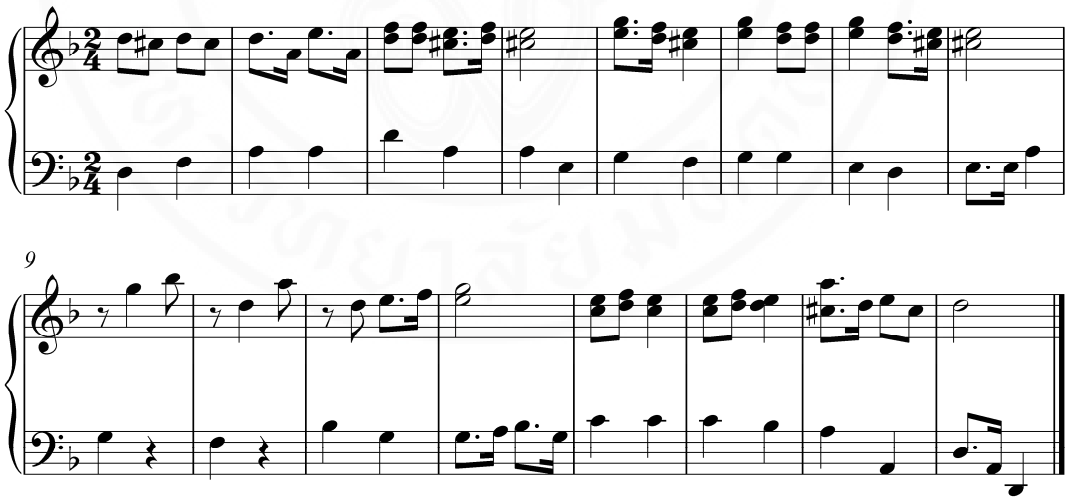

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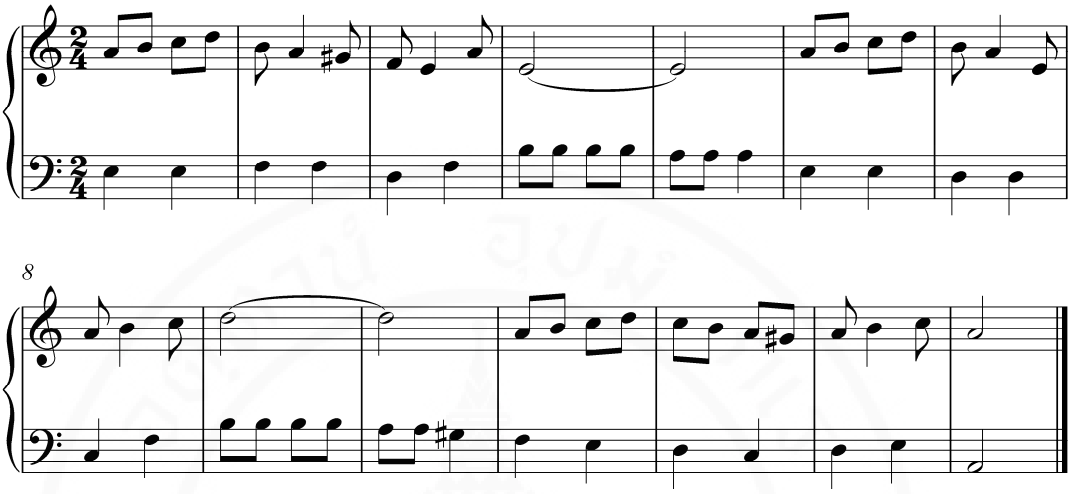
No. 3



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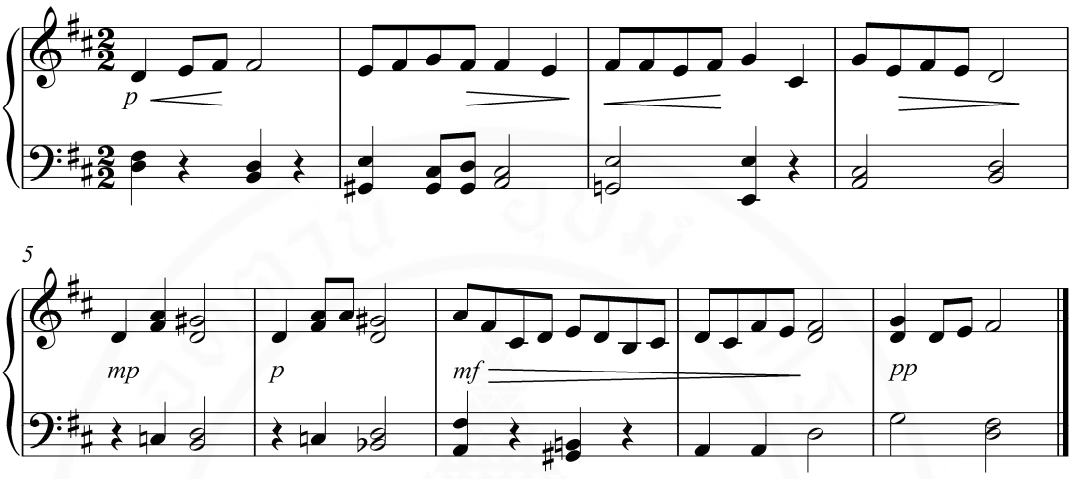
Week 5

No. 1



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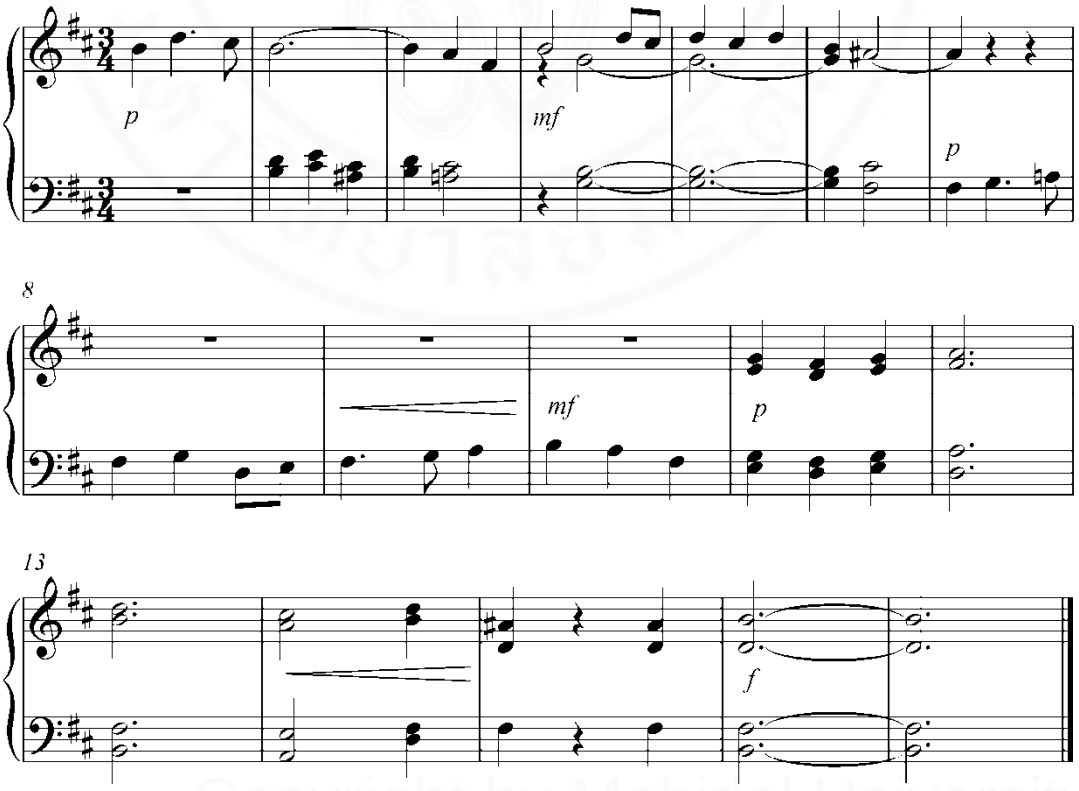

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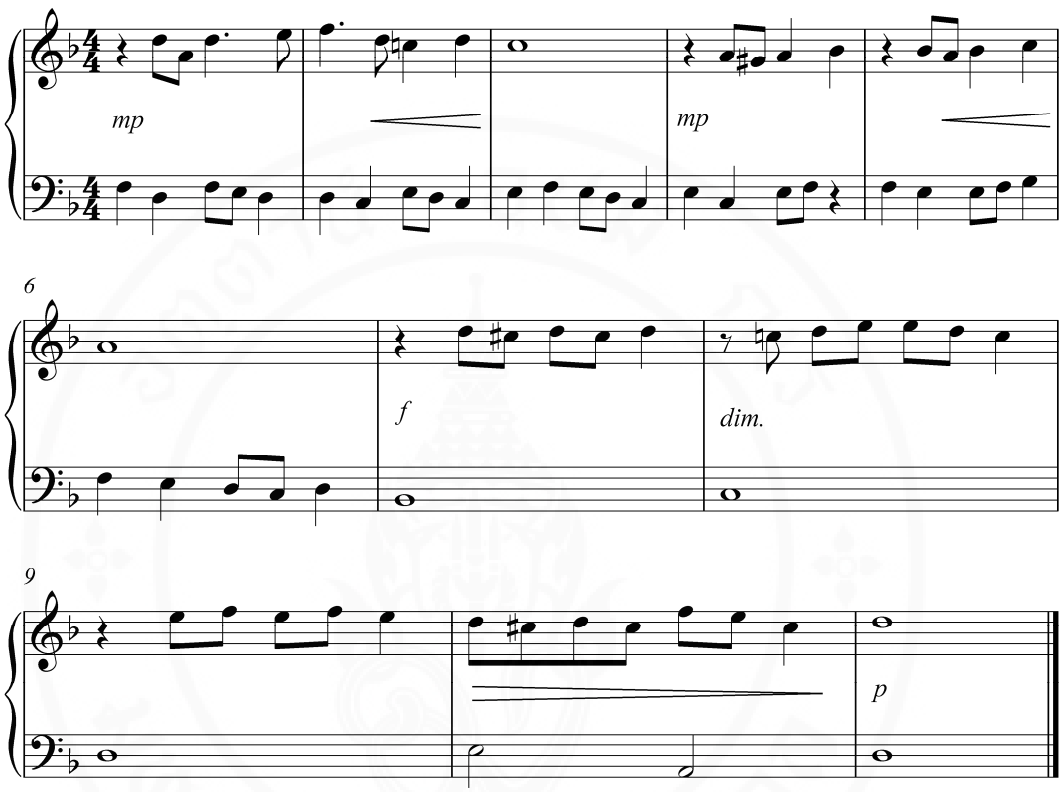

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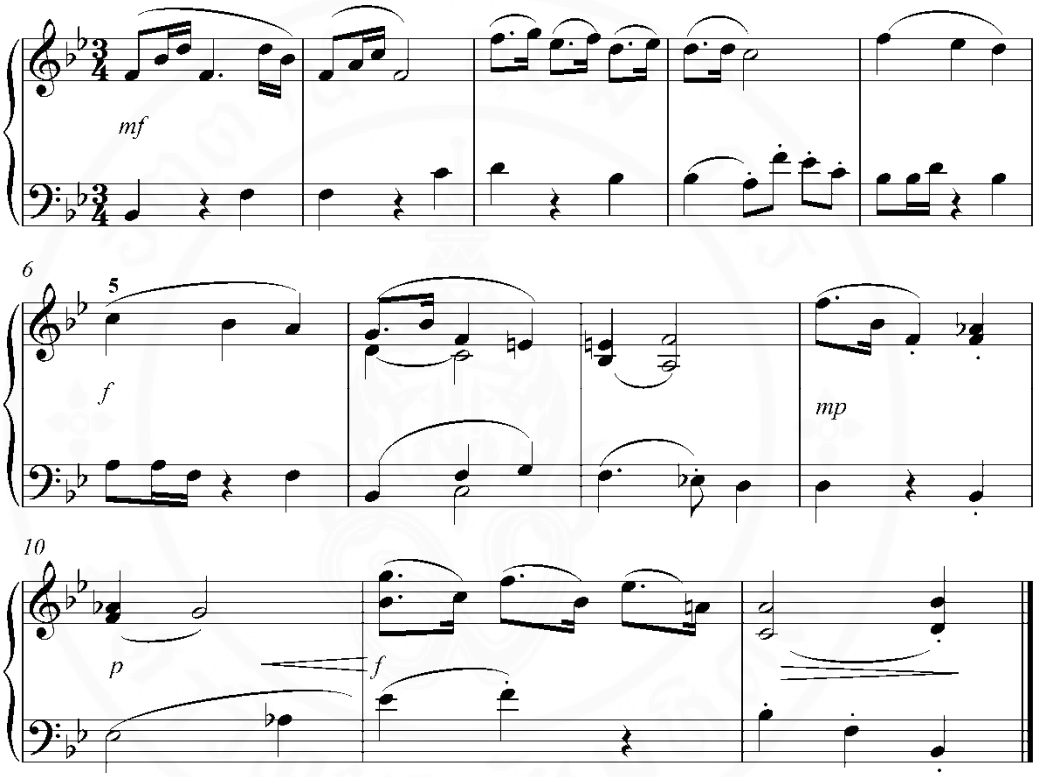
Week 6

No. 1



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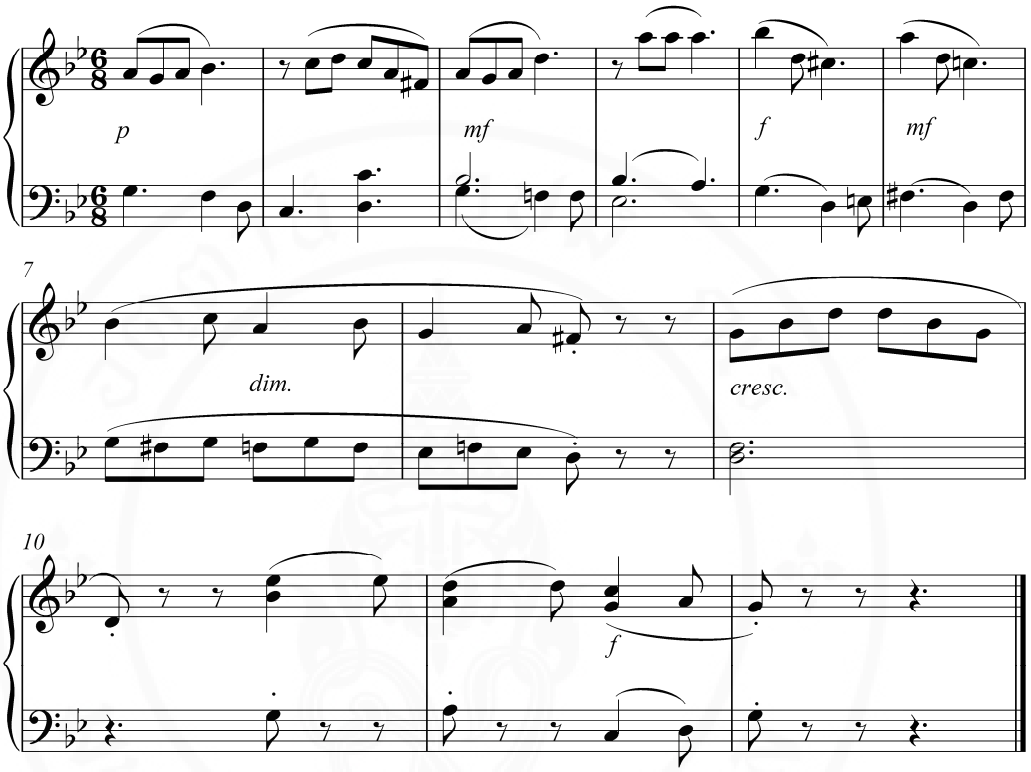
No. 2



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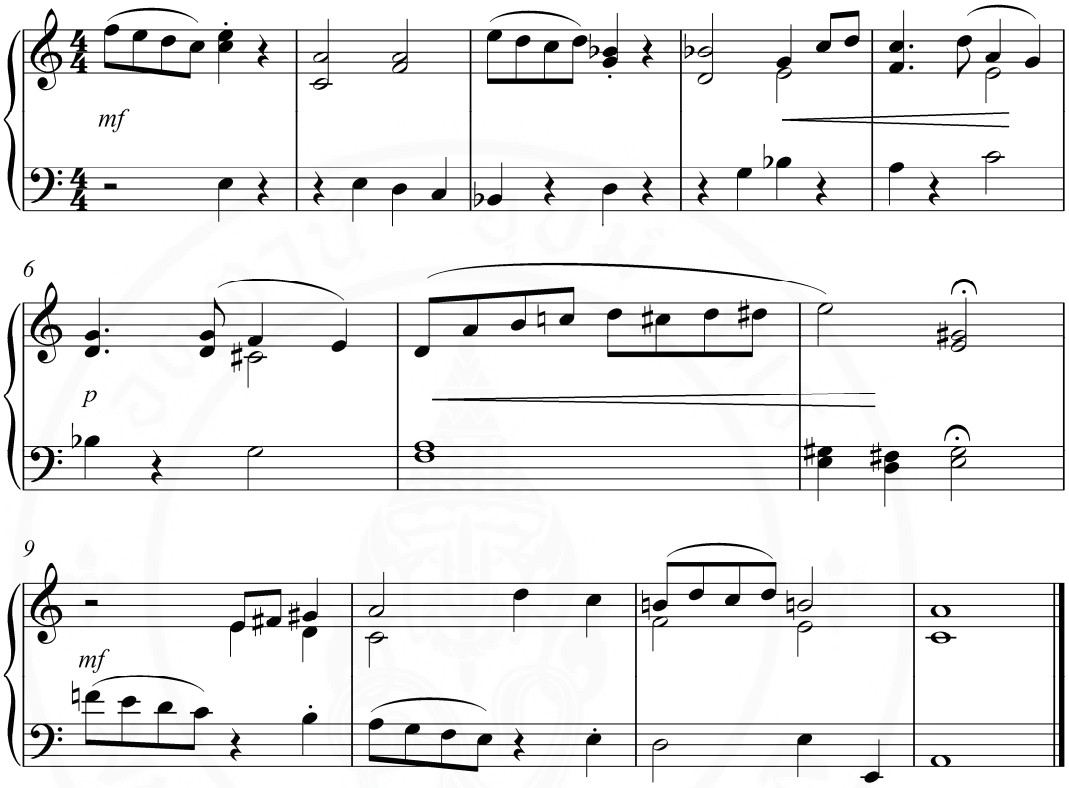

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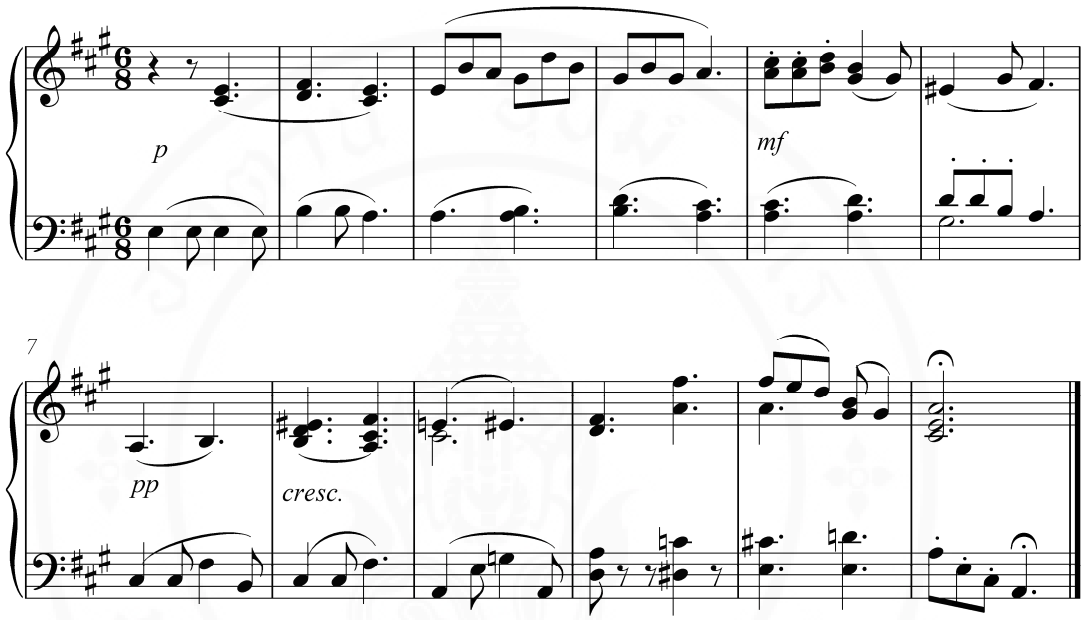
Week 7

No. 1



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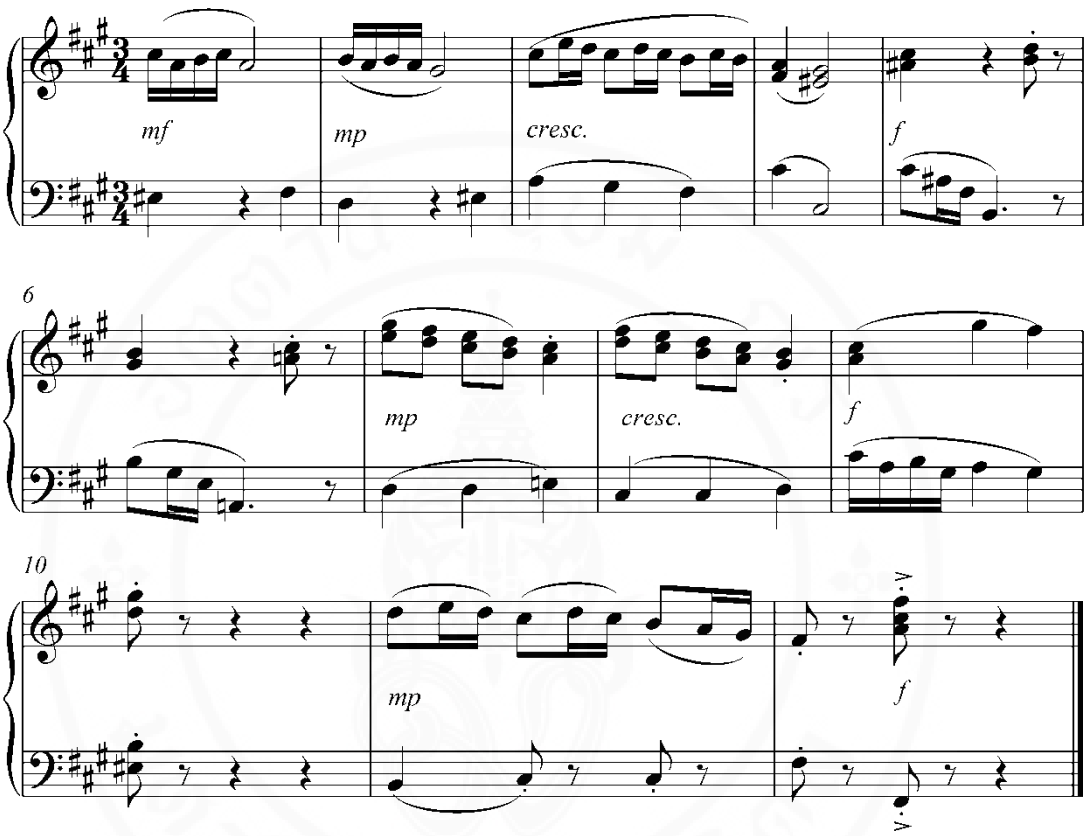

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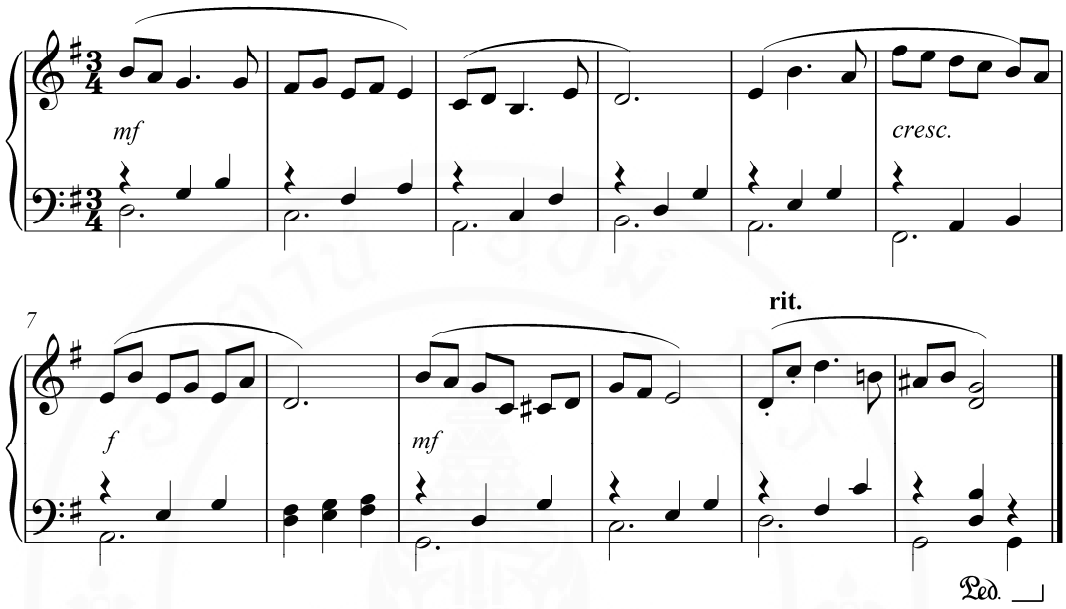

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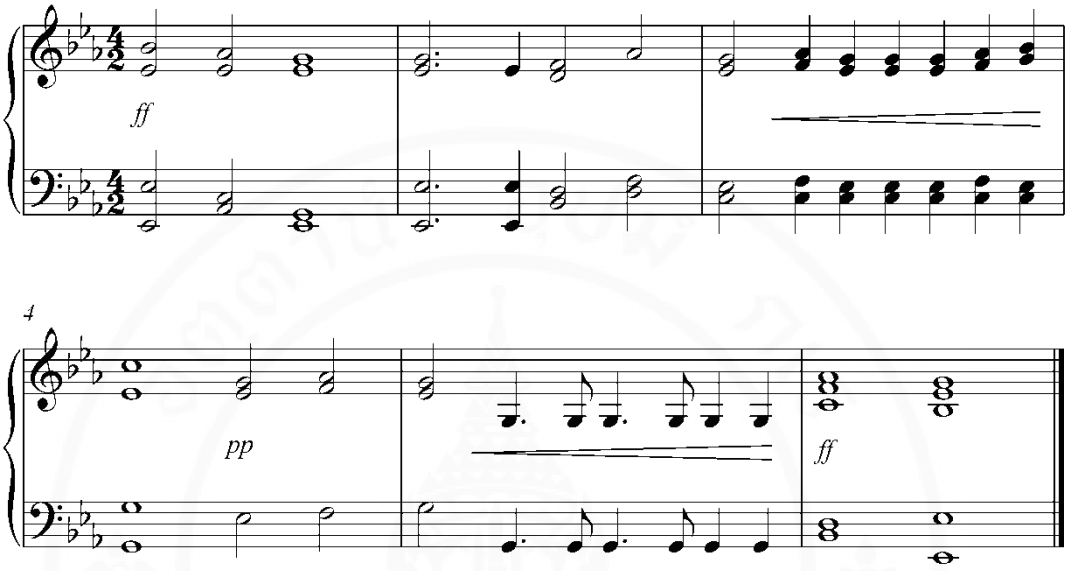
Week 8

No. 1



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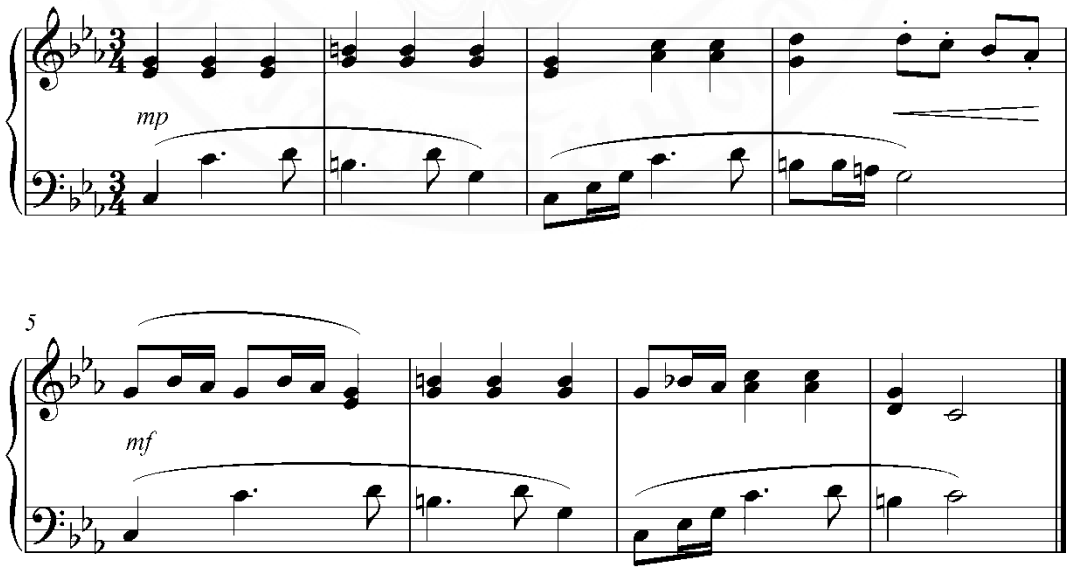

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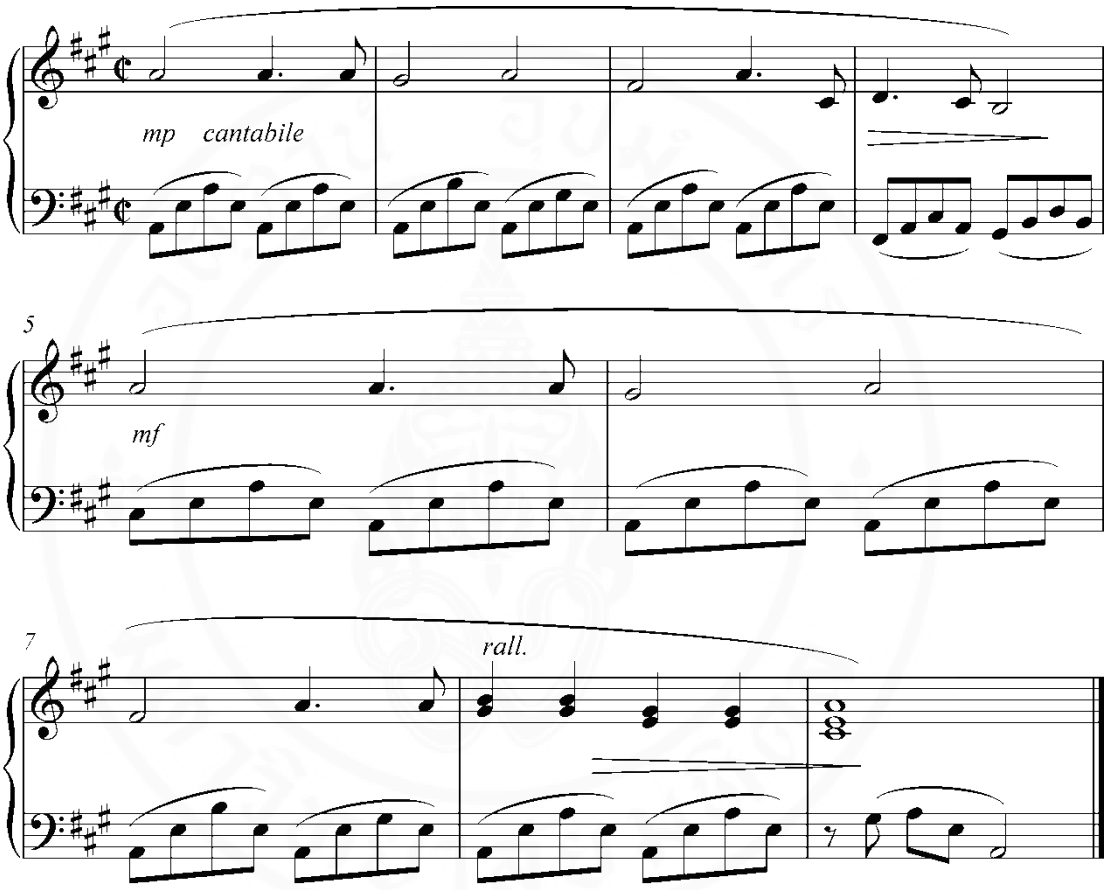

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Week 9

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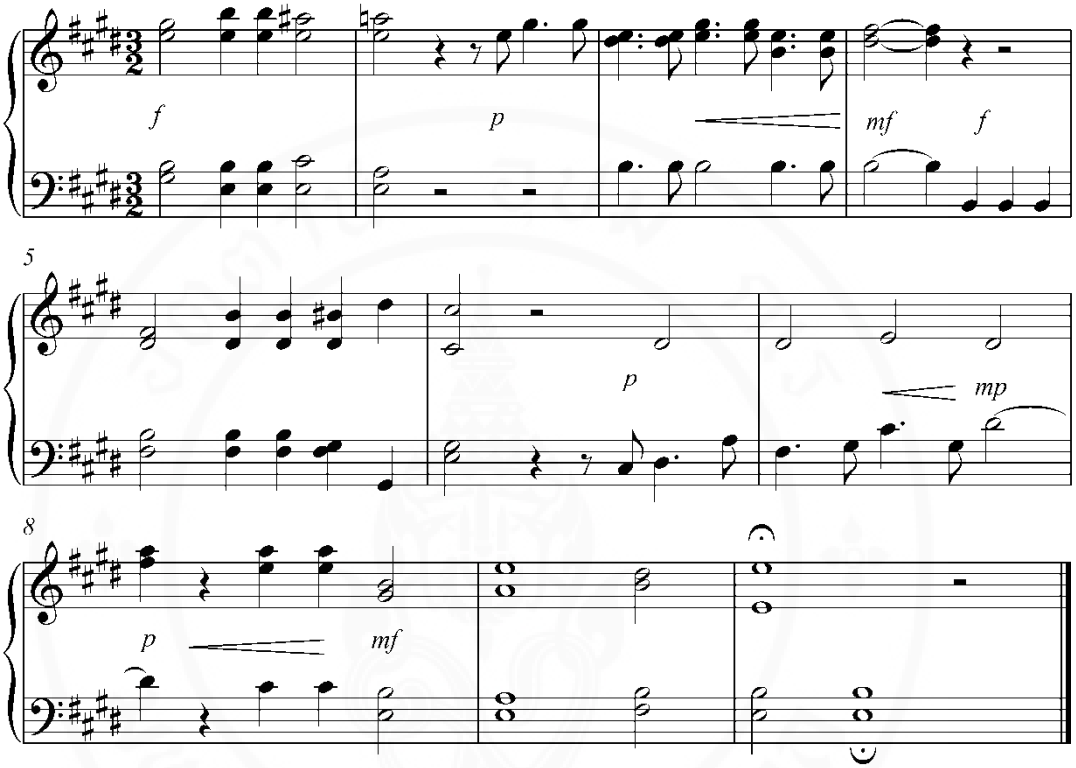

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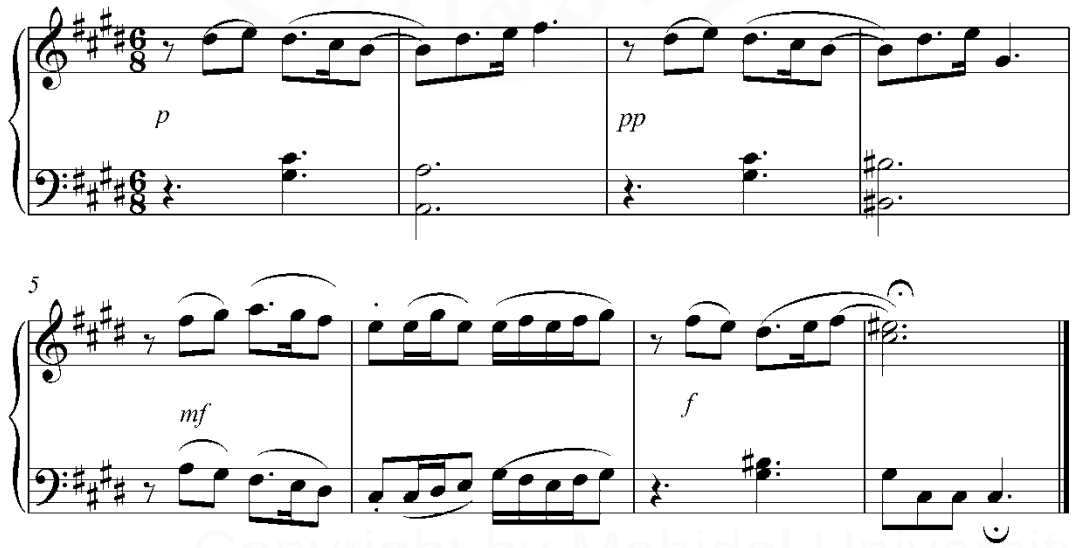

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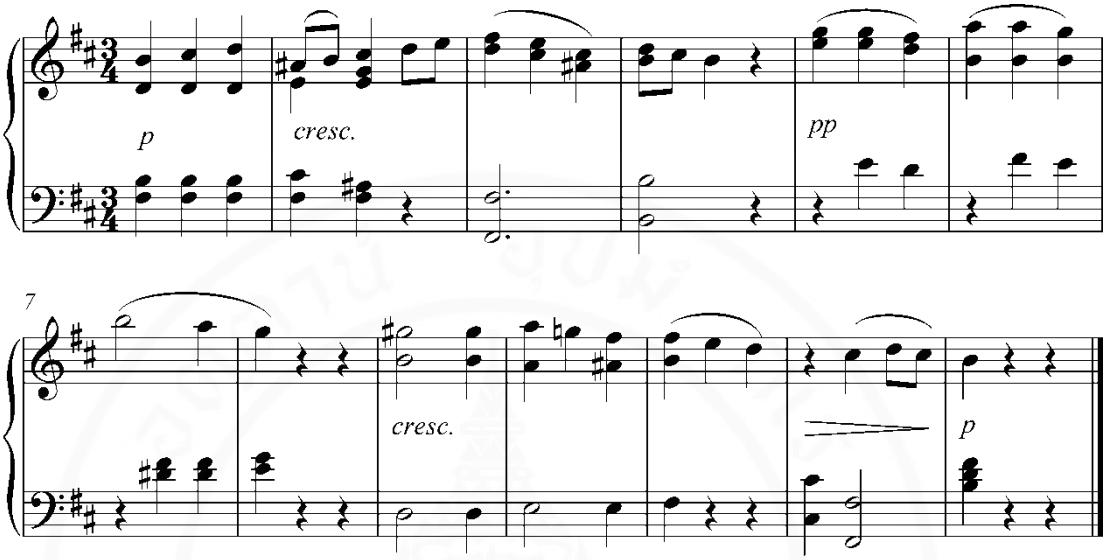

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Week 10

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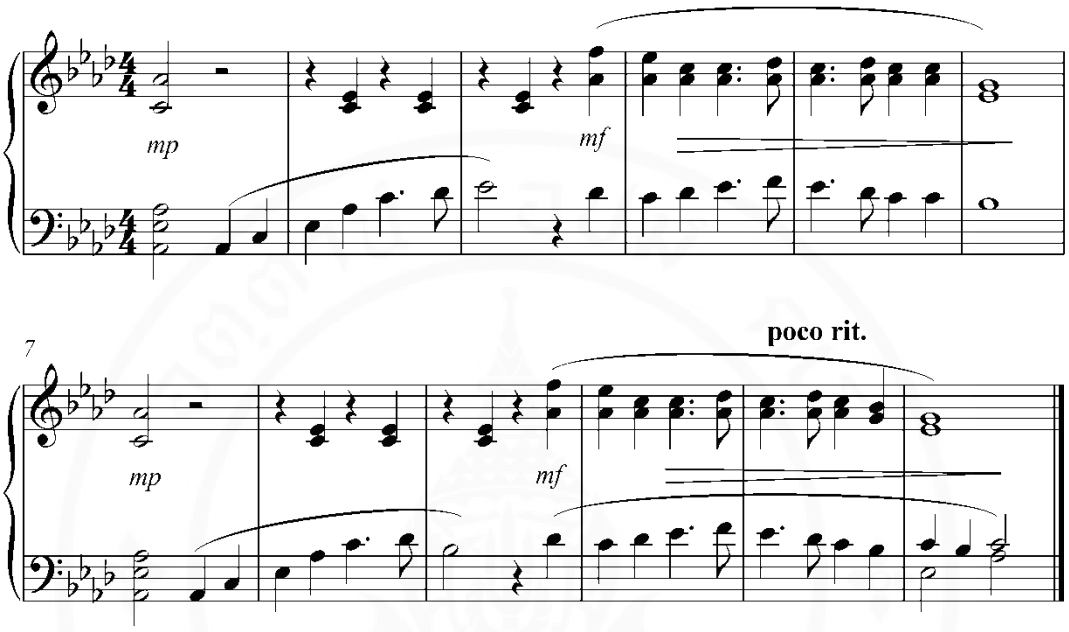

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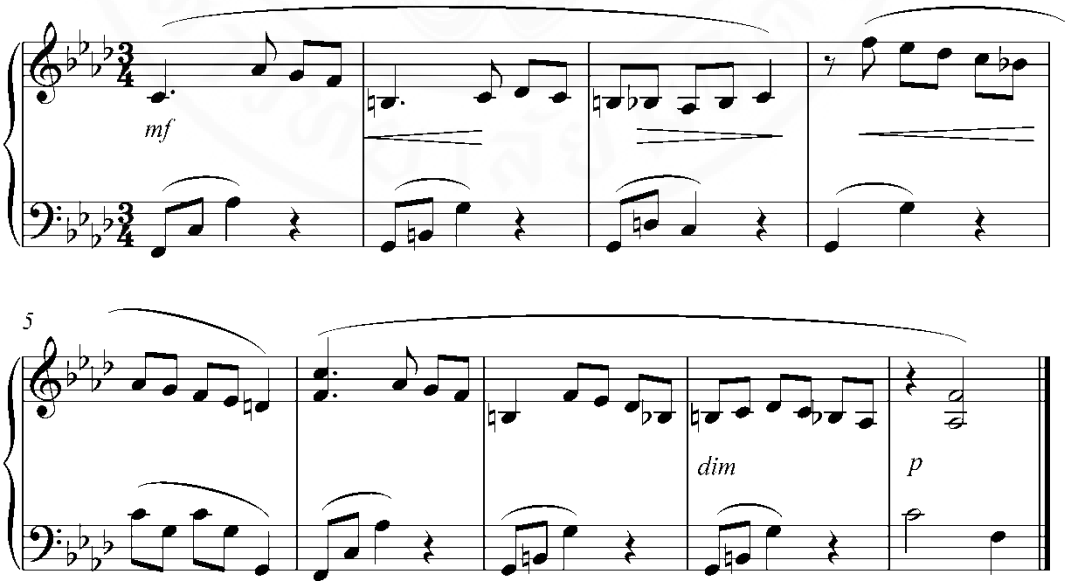

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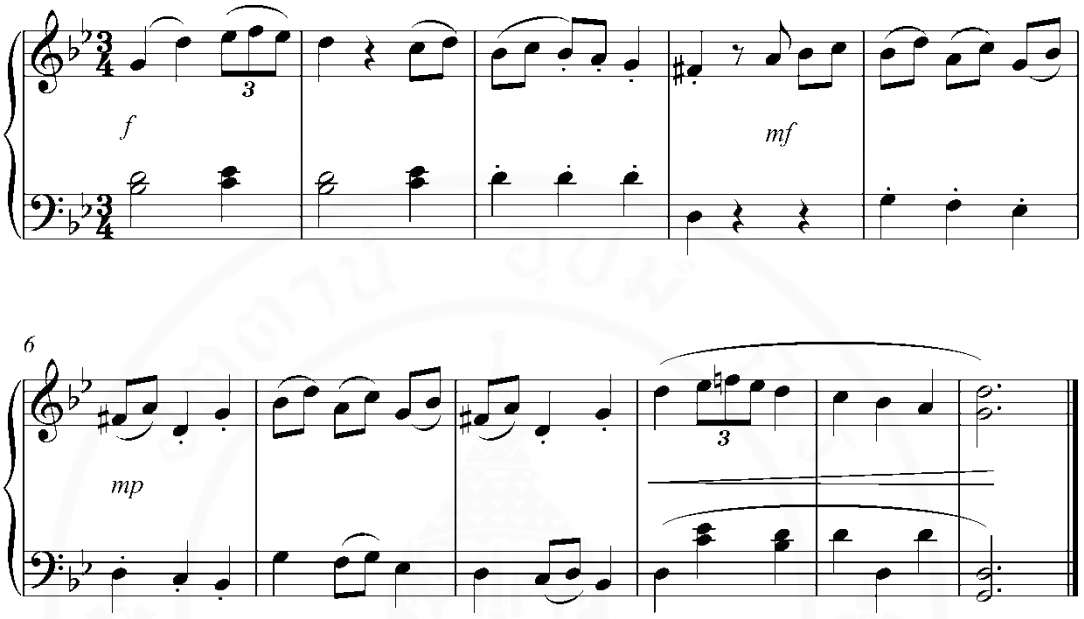

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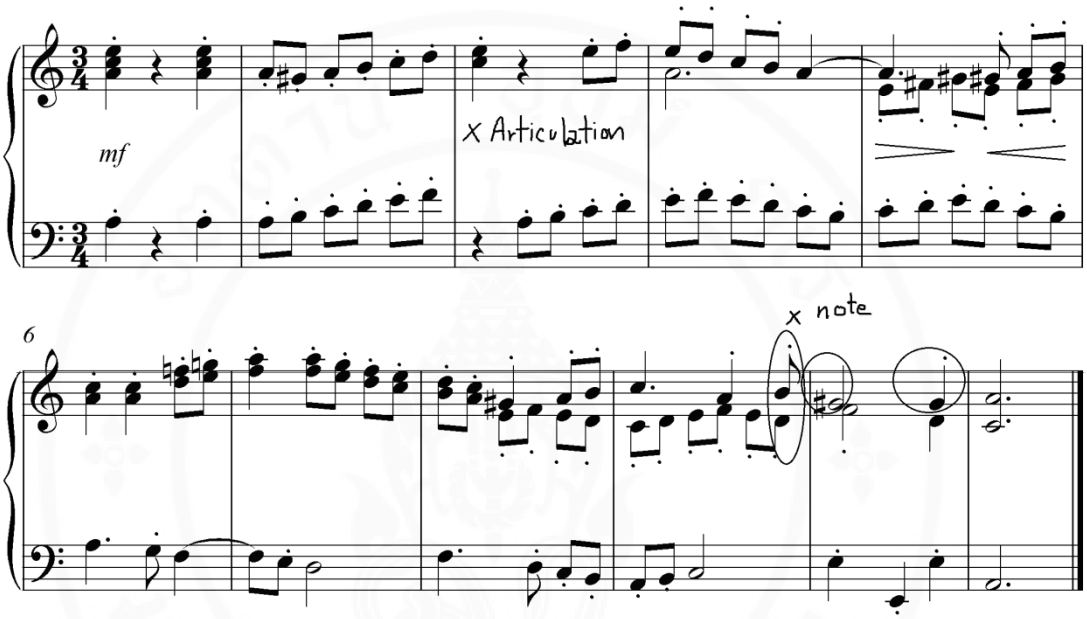
The assessment examples

1. Pre-test and post-test assessment examples

Piece for pre-test/ post-test no.1



Topic	Subtopic	Mark
Note Accuracy	Random note	3
	Overall	3
	Key signature	3
	End with V-I	3
Rhythmic accuracy	Rhythmic pattern	3
	Fluency	3
Dynamic, Articulation	Dynamic	1
	Articulation	1

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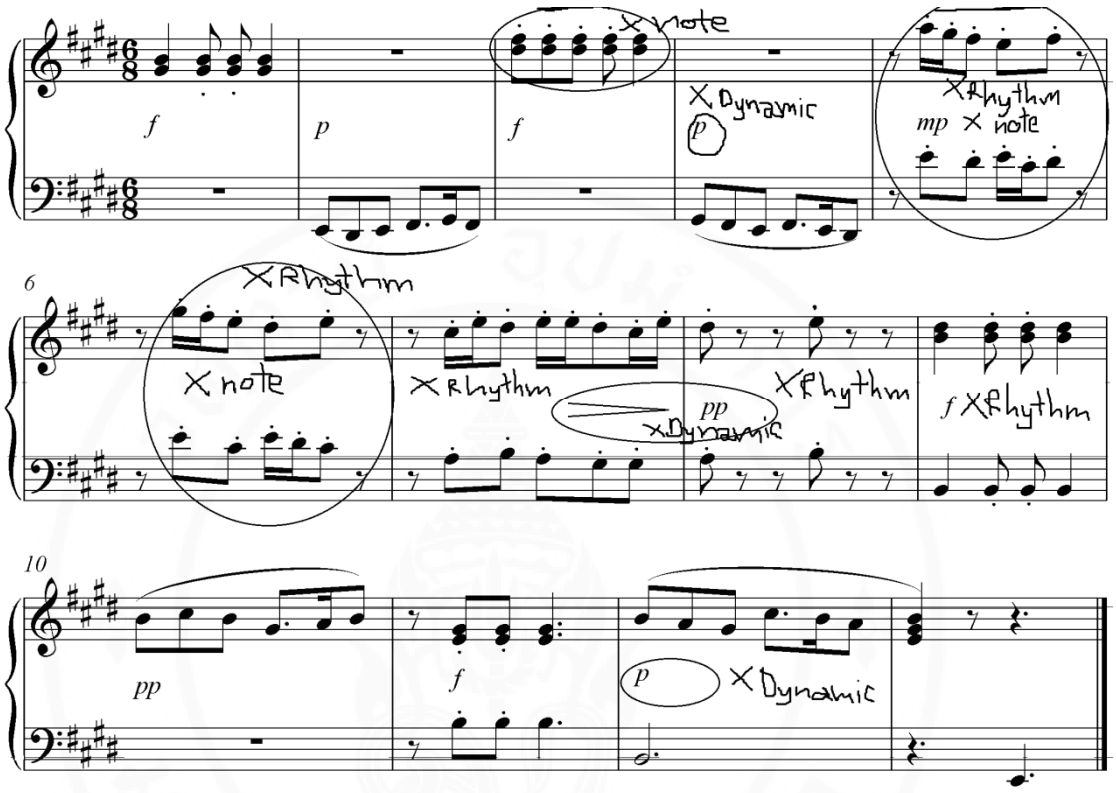
Piece for pre-test/ post-test no.2



Topic	Subtopic	Mark
Note Accuracy	Random note	2
	Overall	2
	Key signature	2
	End with V-I	3
Rhythmic accuracy	Rhythmic pattern	1
	Fluency	1
Dynamic, Articulation	Dynamic	2
	Articulation	1

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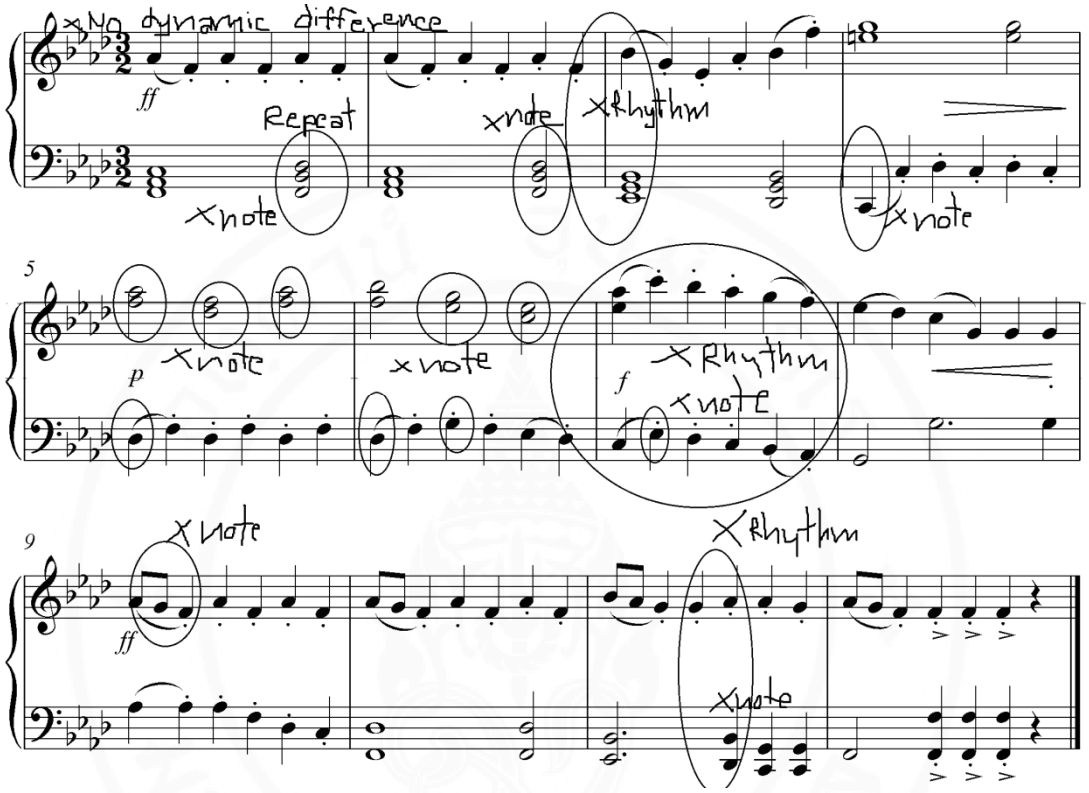
Piece for pre-test/ post-test no.3



Topic	Subtopic	Mark
Note Accuracy	Random note	2
	Overall	1
	Key signature	1
	End with V-I	3
Rhythmic accuracy	Rhythmic pattern	1
	Fluency	1
Dynamic, Articulation	Dynamic	1
	Articulation	1

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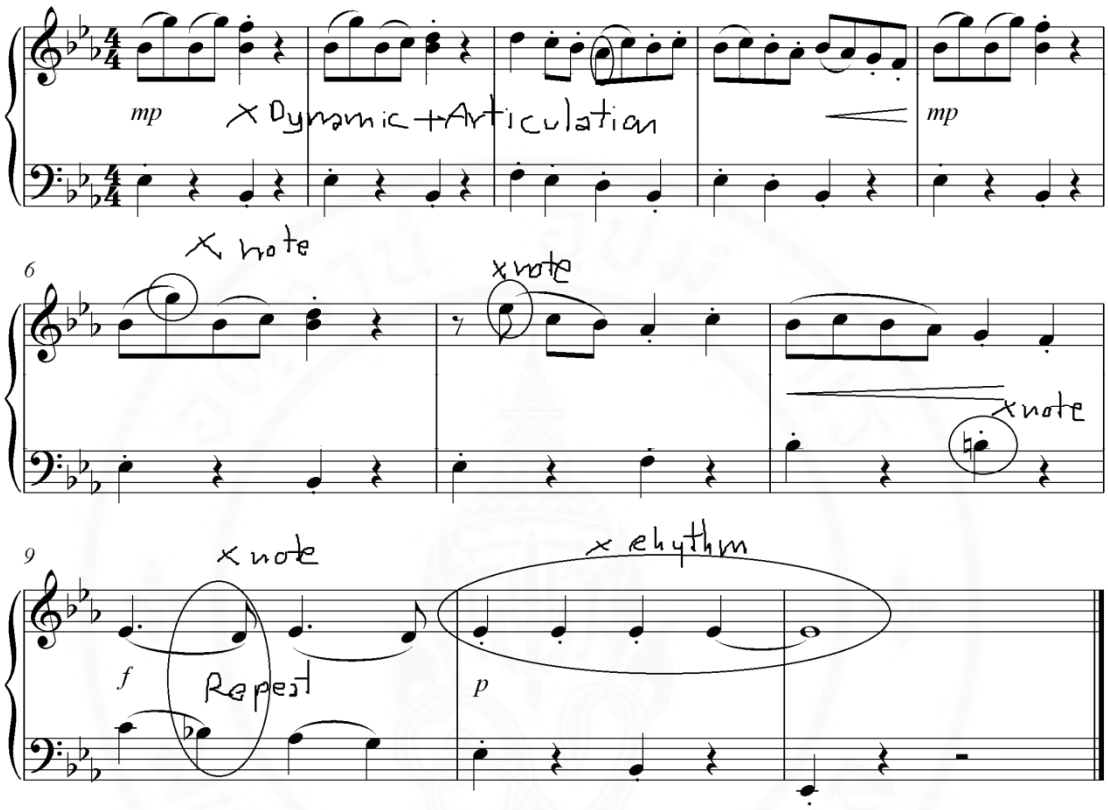
Piece for pre-test/ post-test no.4



Topic	Subtopic	Mark
Note Accuracy	Random note	3
	Overall	3
	Key signature	3
	End with V-I	3
Rhythmic accuracy	Rhythmic pattern	3
	Fluency	3
Dynamic, Articulation	Dynamic	1
	Articulation	1

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2. Each category assessment examples

Level of mark 2 in the following examples means the lowest quality of sight-reading performance of level of mark 2. If the student perform worse than this case, s/he will receive level of mark 1.

Level of mark 3 in the following examples means the lowest quality of sight-reading performance of level of mark 3.

(1) Note accuracy

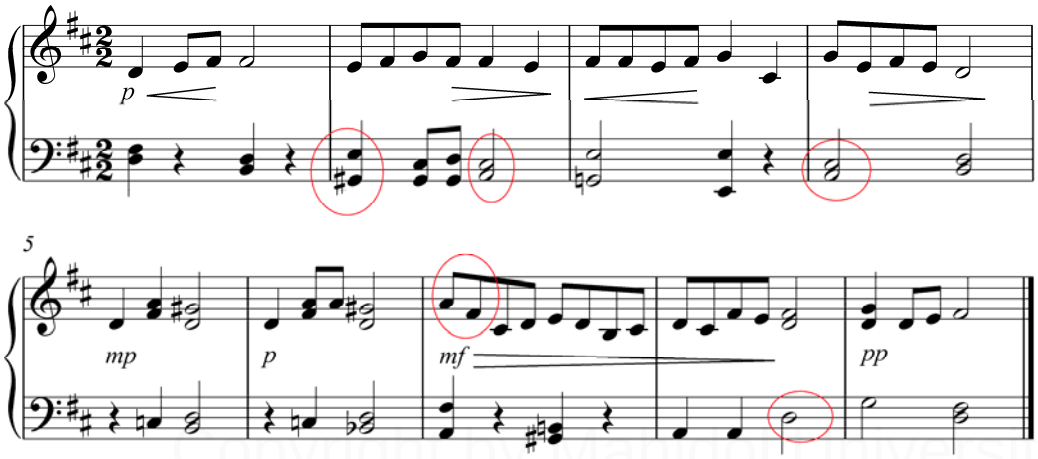
- The accuracy of random note

The instructor specifies 10 random notes in the sight-reading piece by pointing, and then the student plays the random note on the piano.

Mark 3	Mark 2	Mark 1
Fluency playing with 1-2 wrong notes	A little of hesitation with 1-2 wrong note(s)	Hesitation with more than 3-more wrong notes

- Overall note accuracy

Unit 4: Piece No. 1: Level of mark 2



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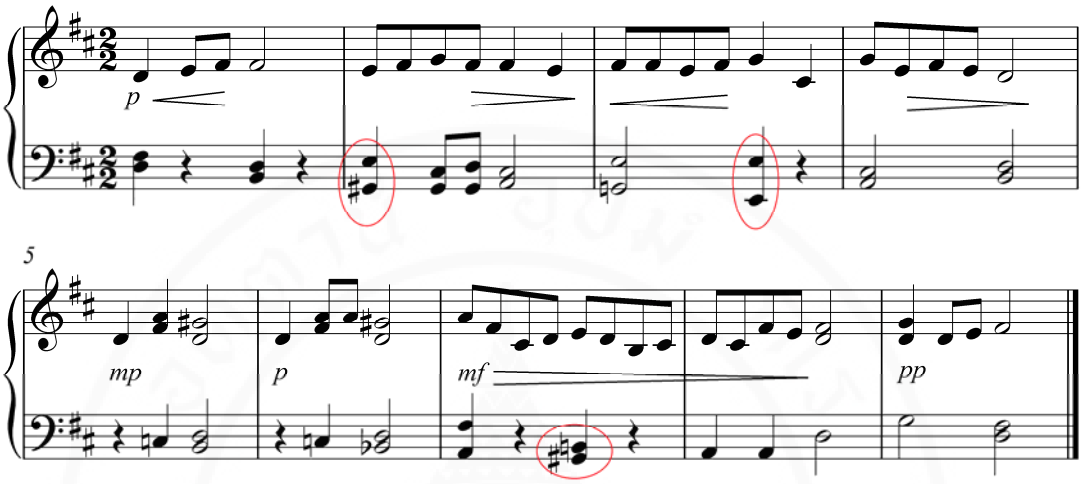
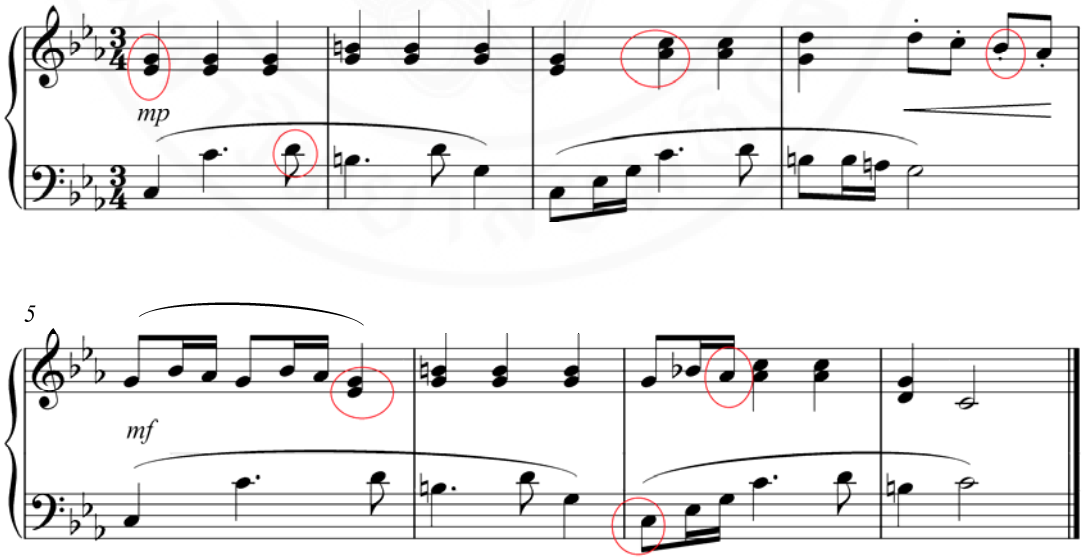
Unit 4: Piece No. 1: Level of mark 3



Unit 7: Piece No. 2: Level of mark 2



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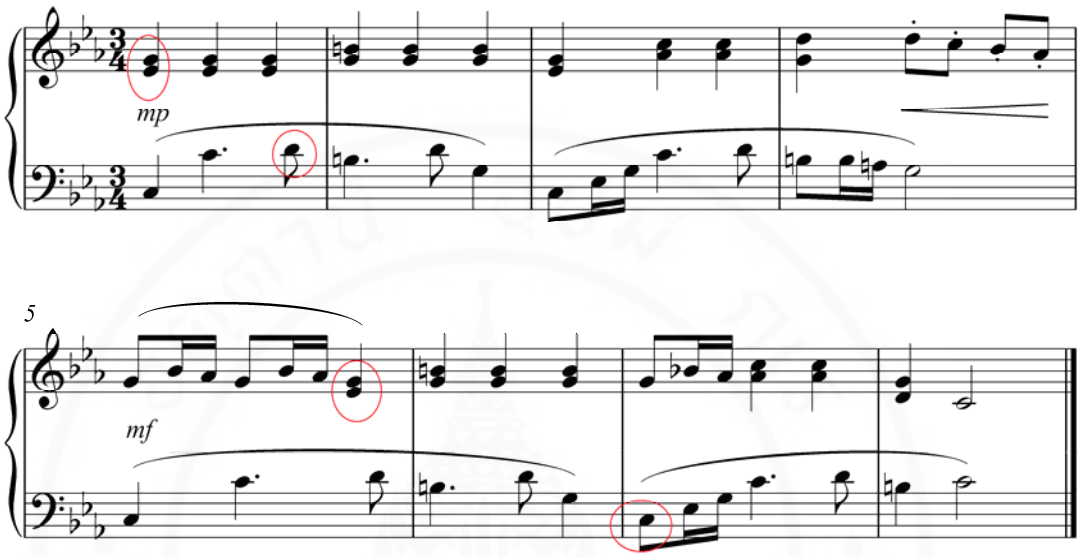
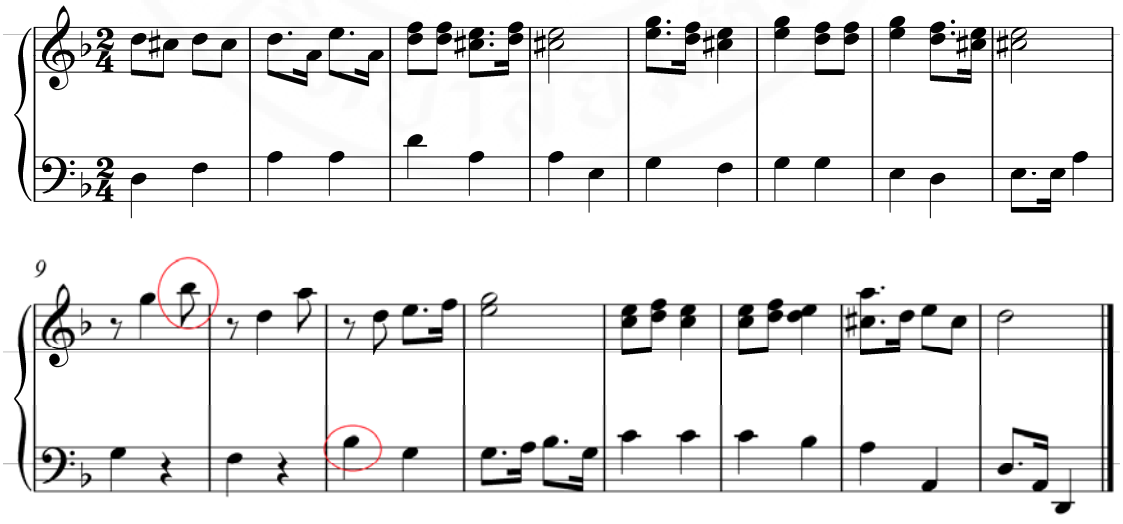
Unit 7: Piece No. 2: Level of mark 3



- Note with sharp or flat signs follows key signature

Unit 3: Piece No. 2: Level of mark 2



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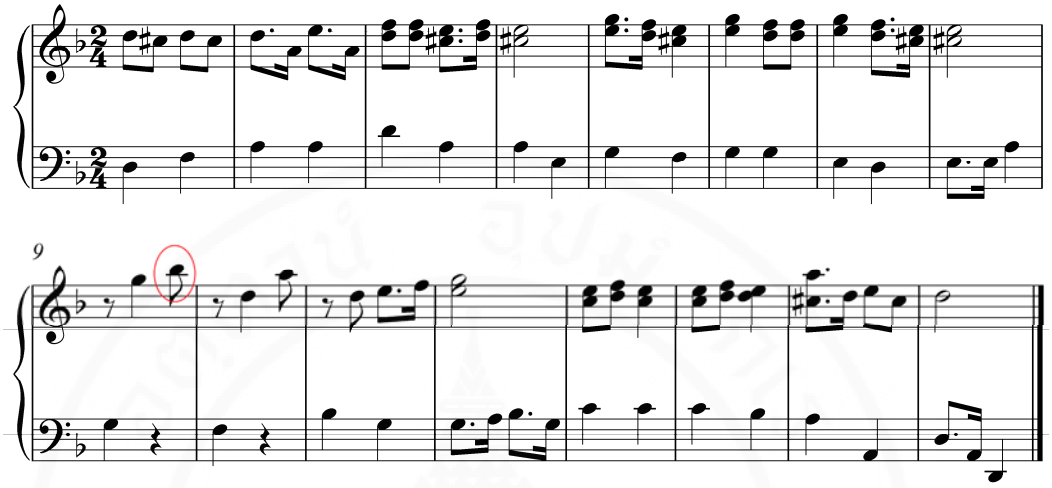
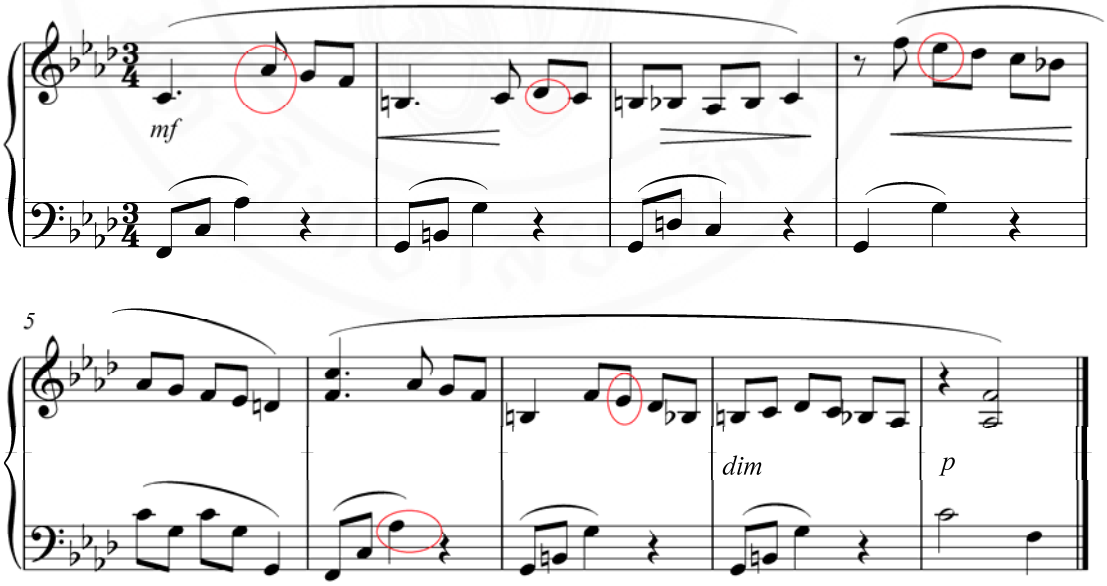
Unit 3: Piece No. 2: Level of mark 3



Unit 9: Piece No. 2: Level of mark 2



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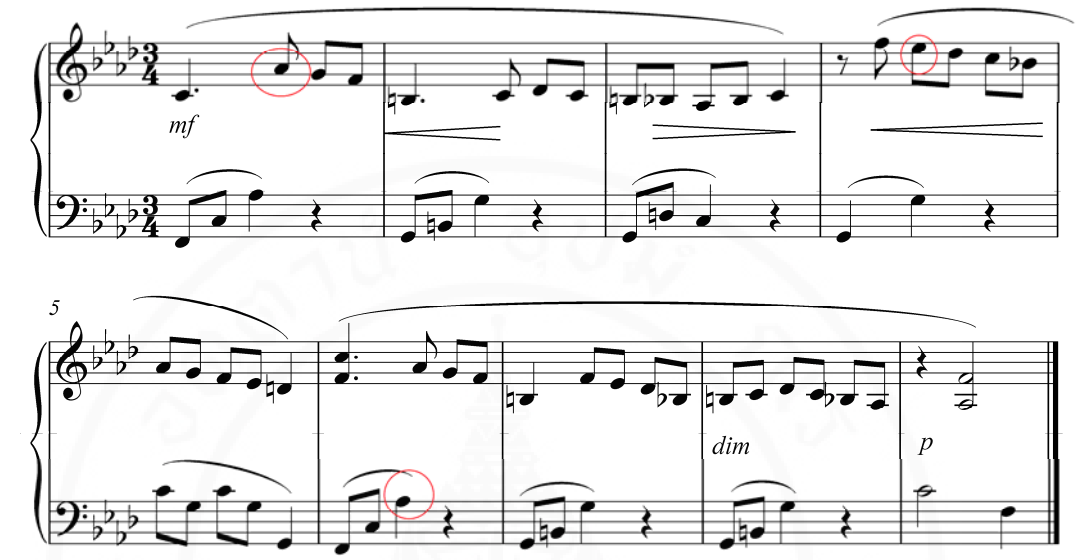
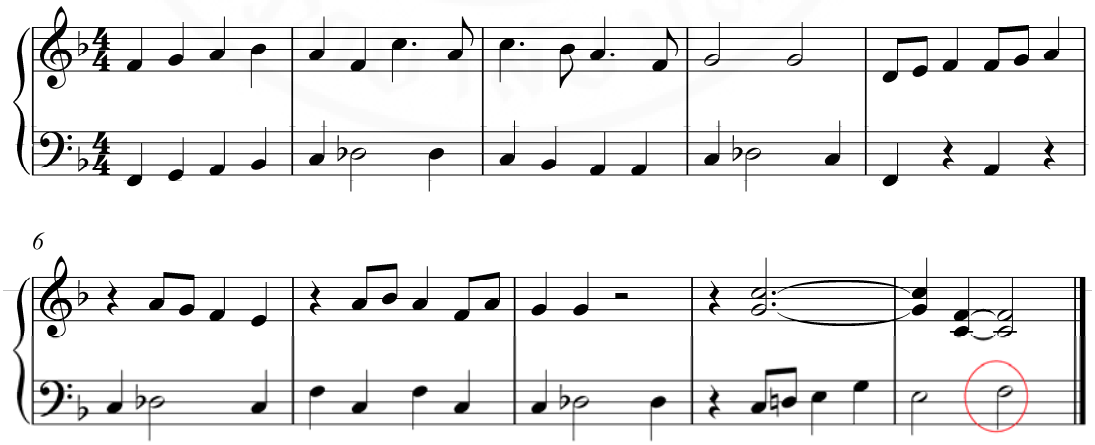
Unit 9: Piece No. 2: Level of mark 3



- Ending with dominant (V) to tonic (I)

Unit 3: Piece No. 1: Level of mark 2



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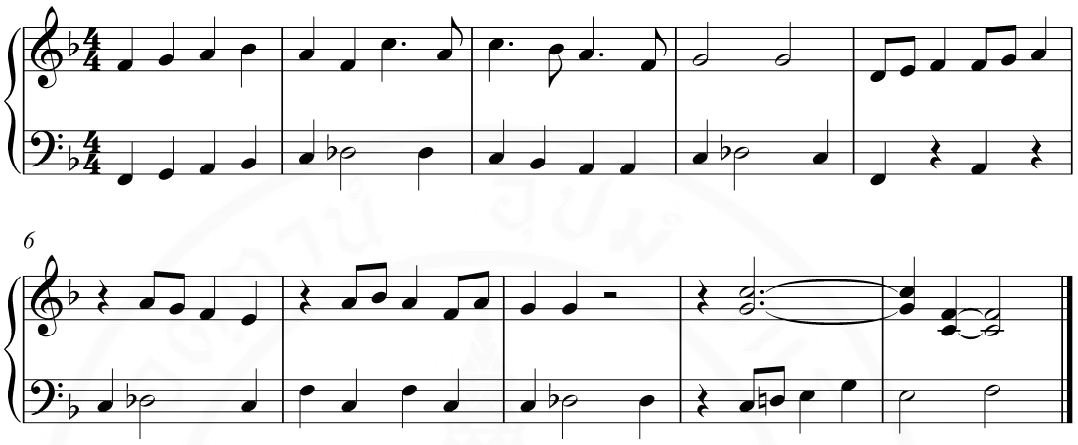
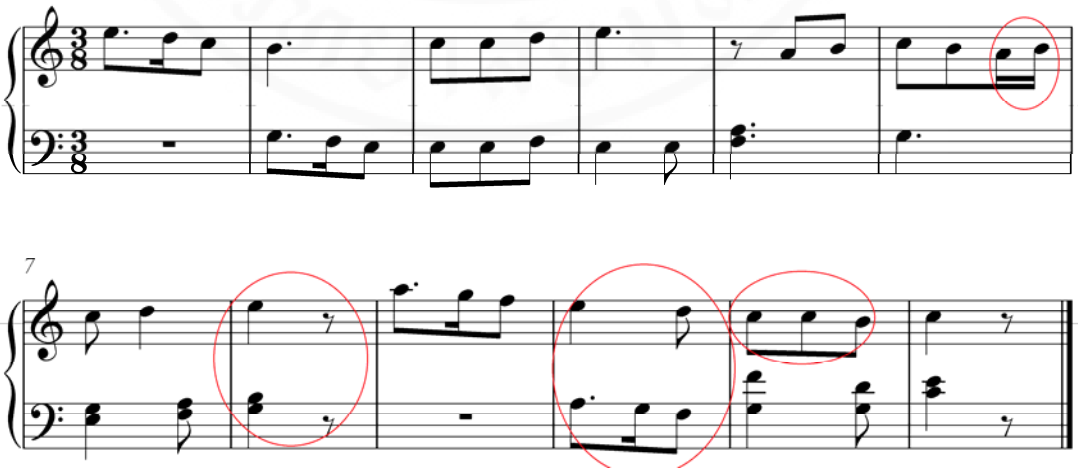
Unit 3: Piece No. 1: Level of mark 3



(2) Rhythm accuracy

- Rhythmic pattern accuracy

Unit 1: Piece No. 1: Level of mark 2



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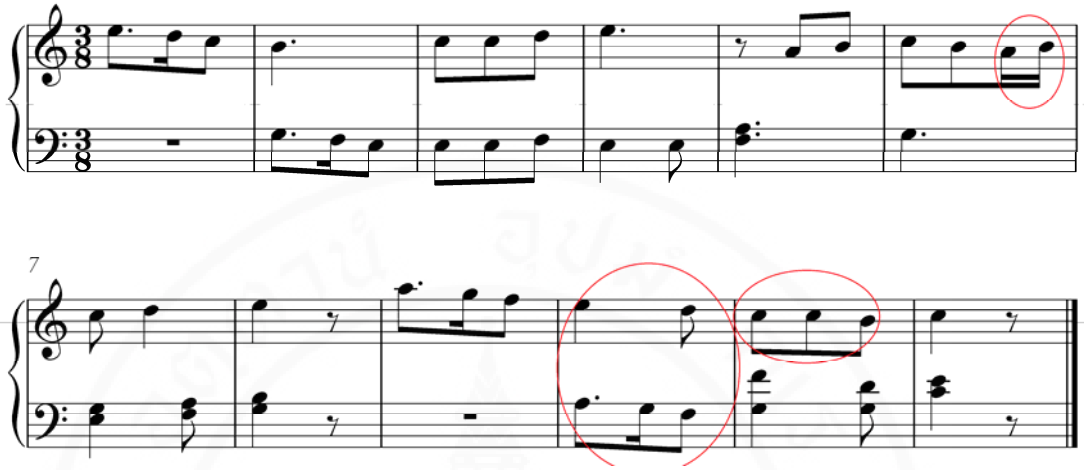
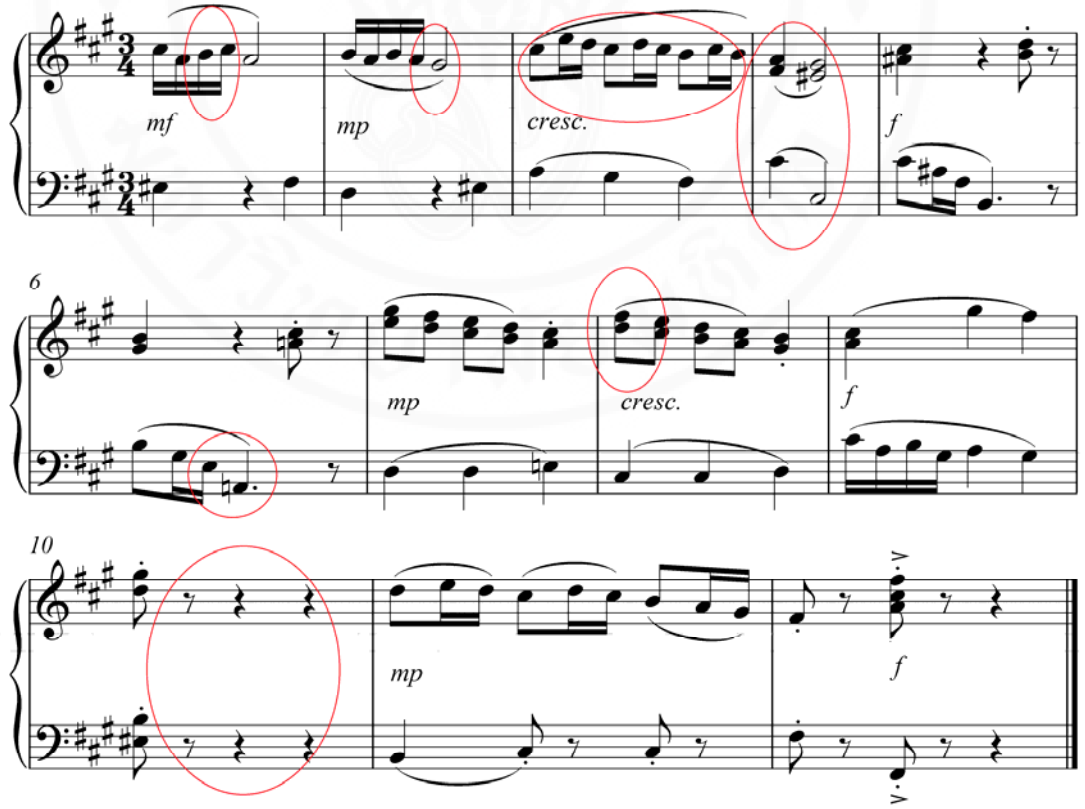
Unit 1: Piece No. 1: Level of mark 3



Unit 6: Piece No. 2: Level of mark 2



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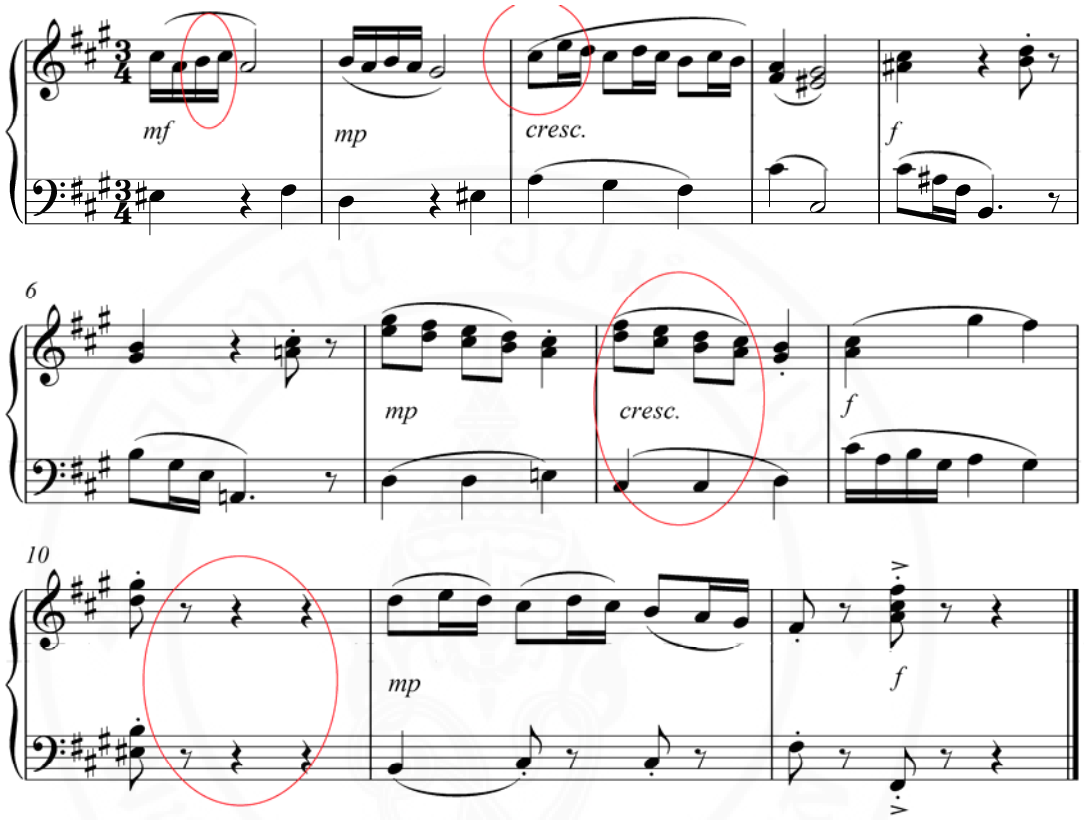
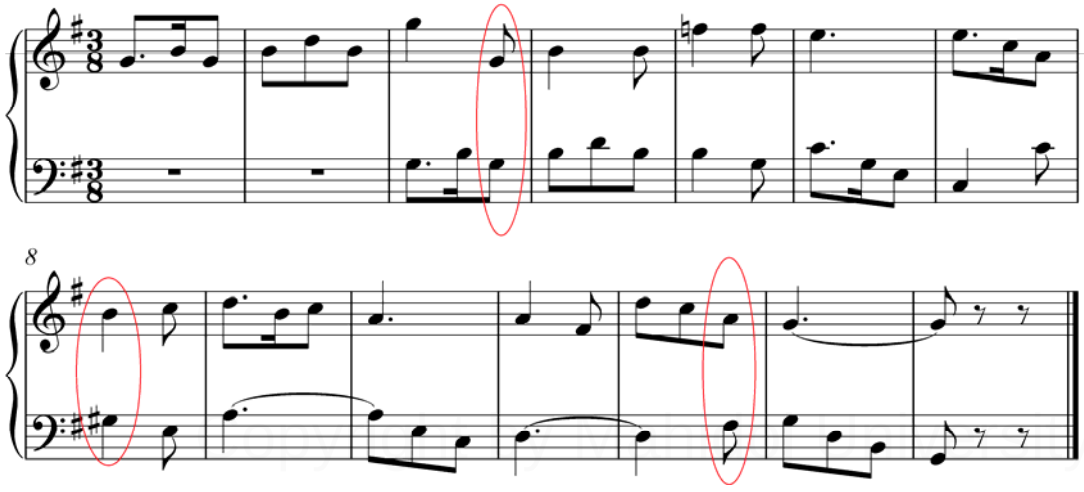
Unit 6: Piece No. 2: Level of mark 3

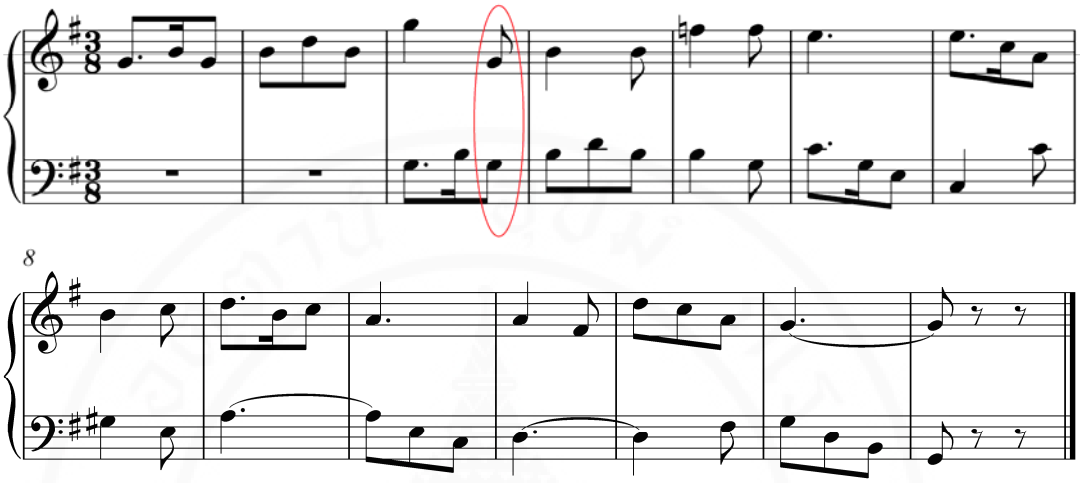


- Fluency of performance

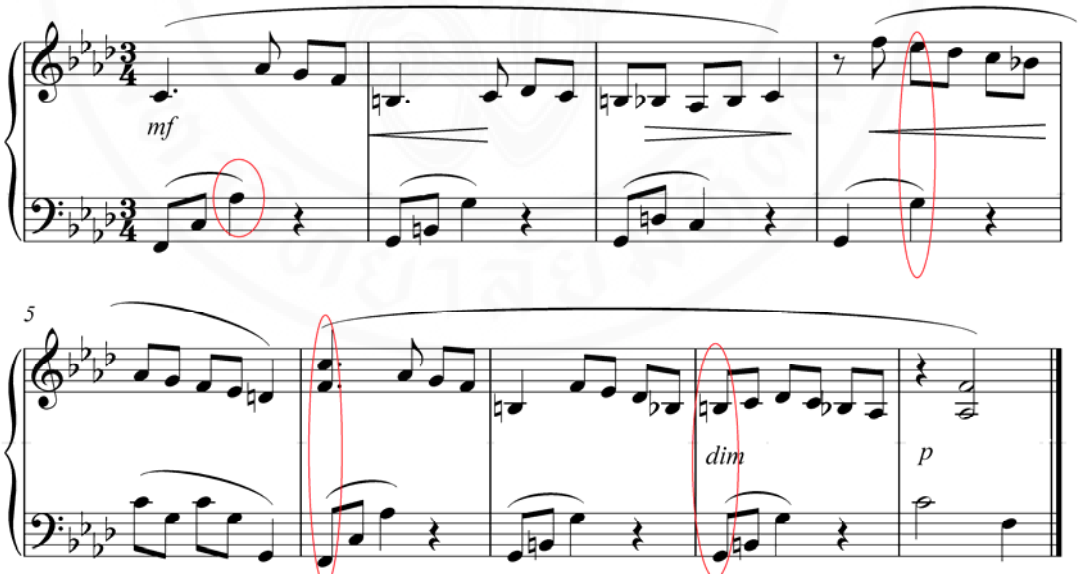
Unit 2: Piece No. 1: Level of mark 2



Unit 2: Piece No. 1: Level of mark 3



Unit 9: Piece No. 2: Level of mark 2



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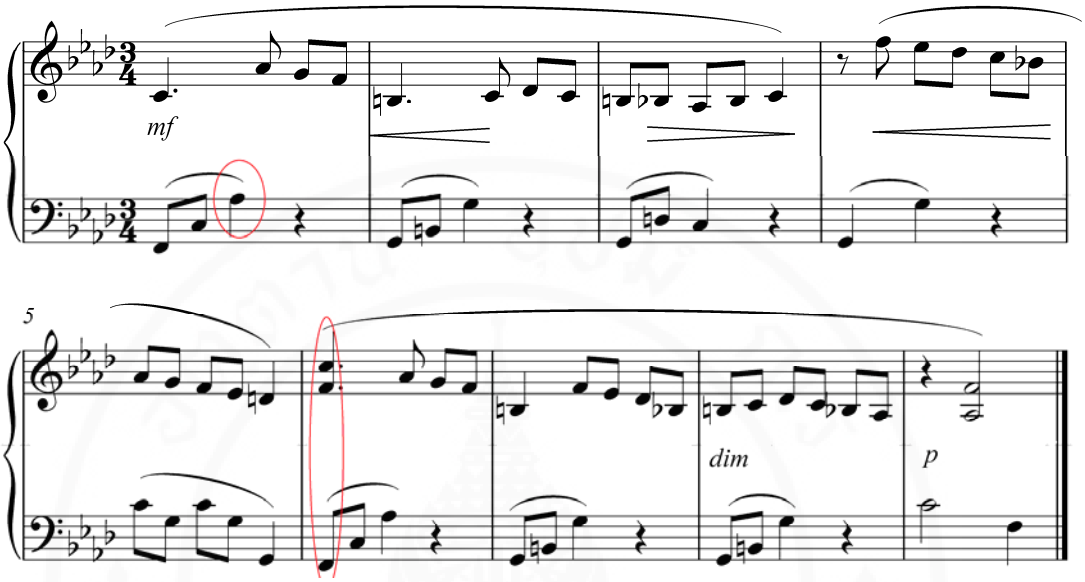
Unit 9: Piece No. 2: Level of mark 3



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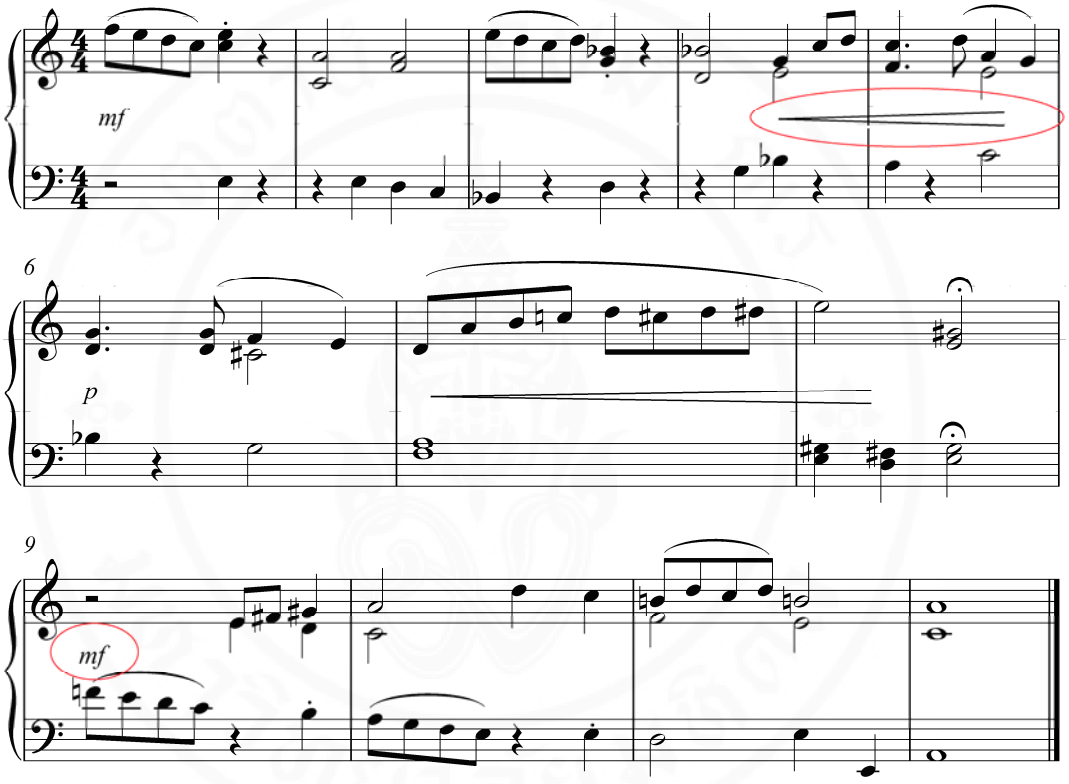
3) Dynamic and articulation markings

- Dynamic marking

Unit 5: Piece No. 3: Level of mark 2



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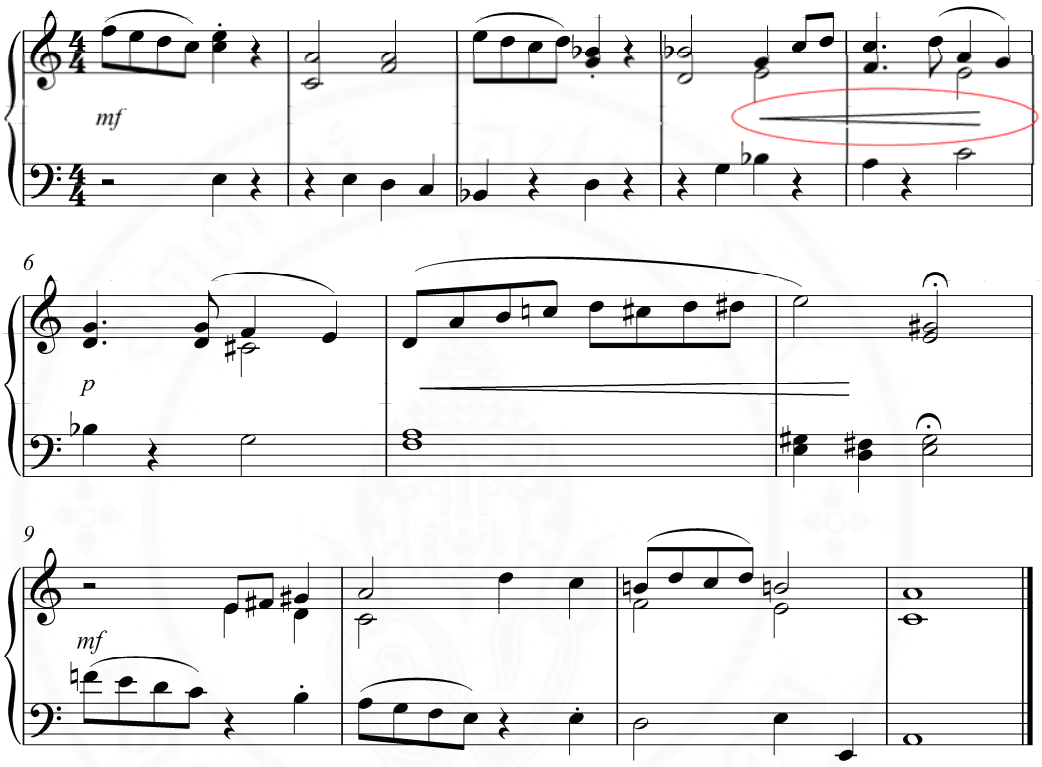
Unit 5: Piece No. 3: Level of mark 3



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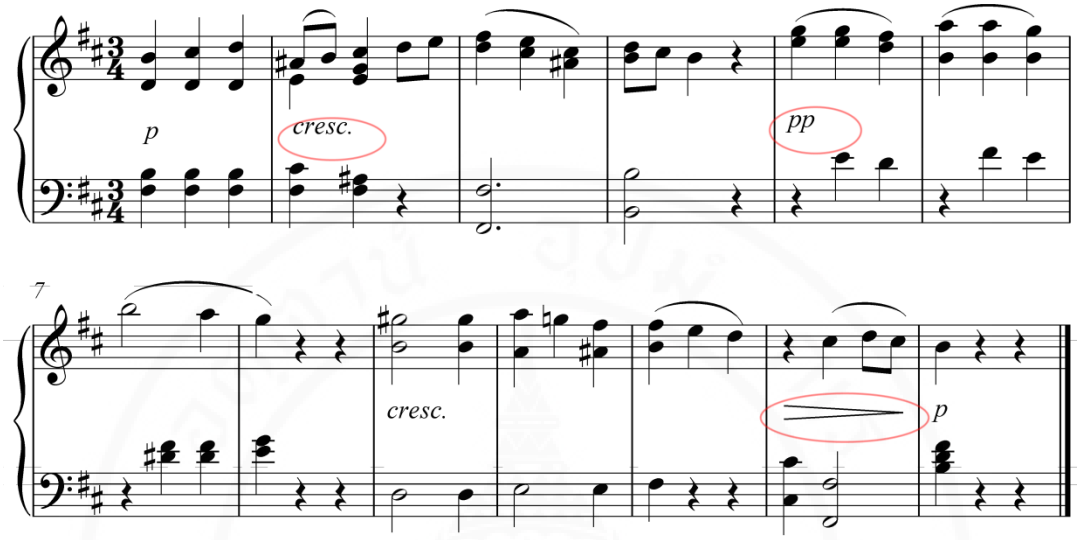
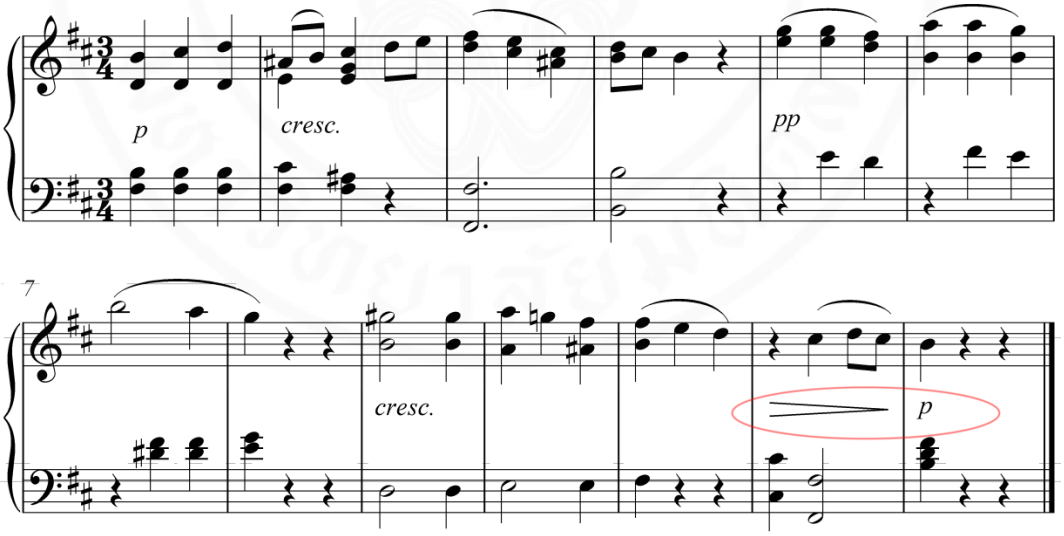
Unit 8: Piece No. 3: Level of mark 2



Unit 8: Piece No. 3: Level of mark 3



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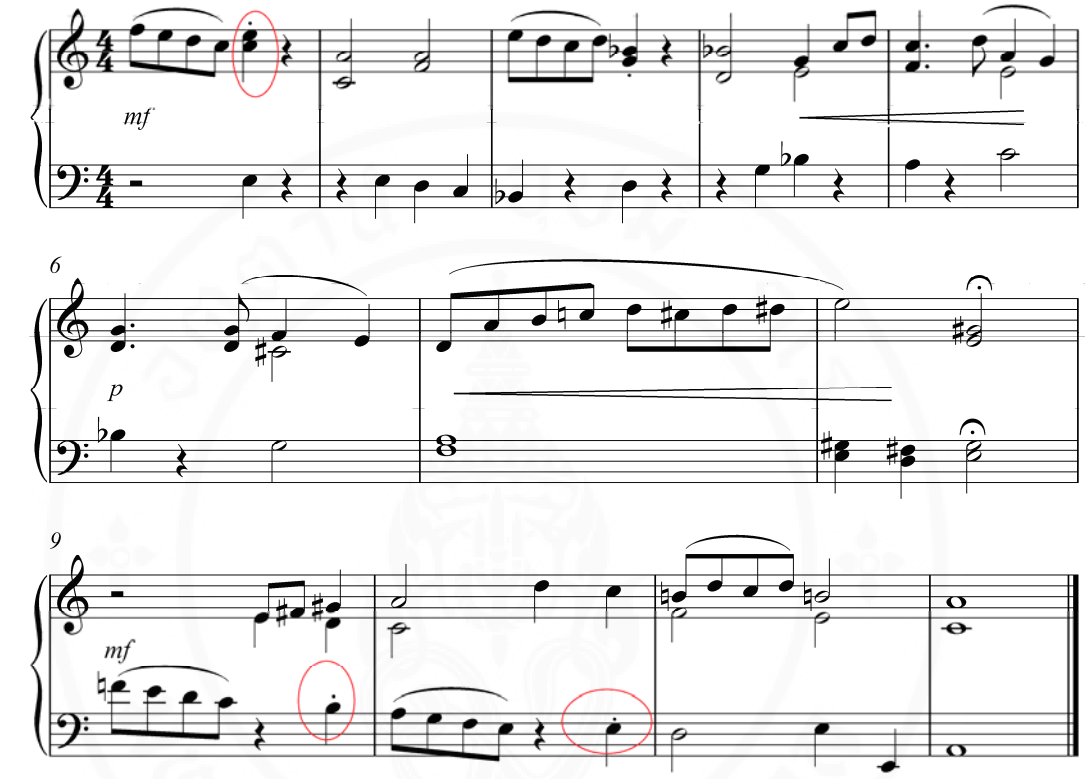
- Articulation marking

Unit 5: Piece No. 3: Level of mark 2



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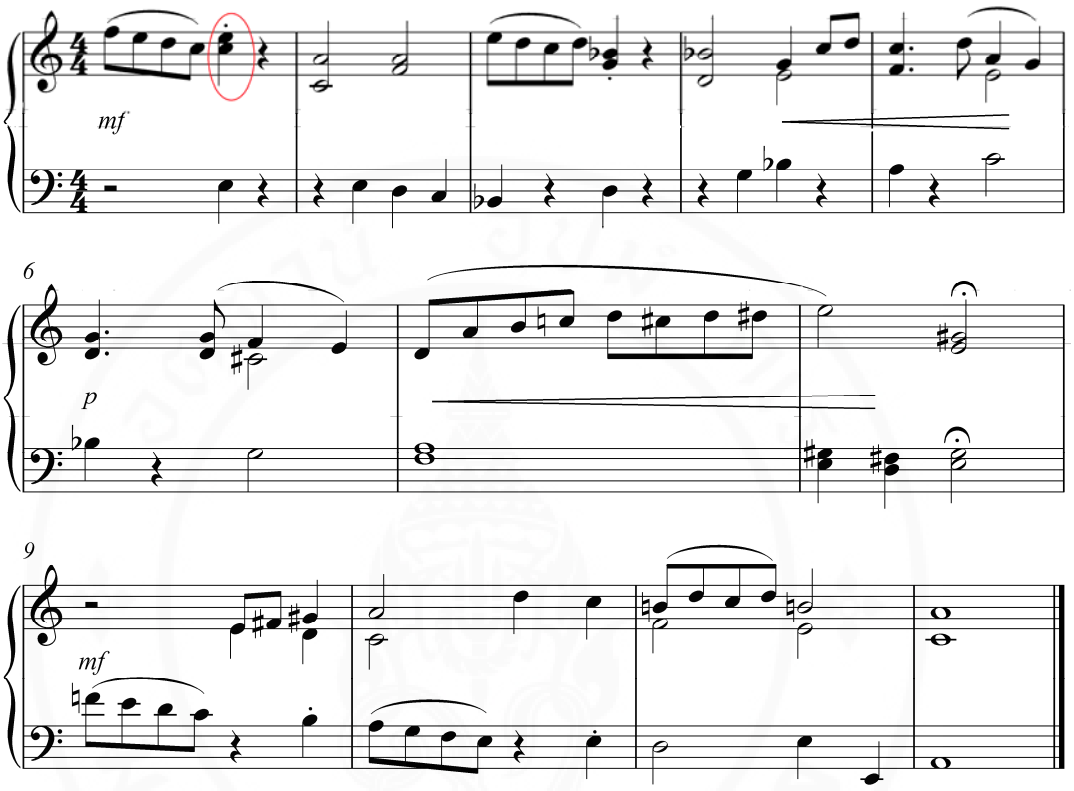
Unit 5: Piece No. 3: Level of mark 3



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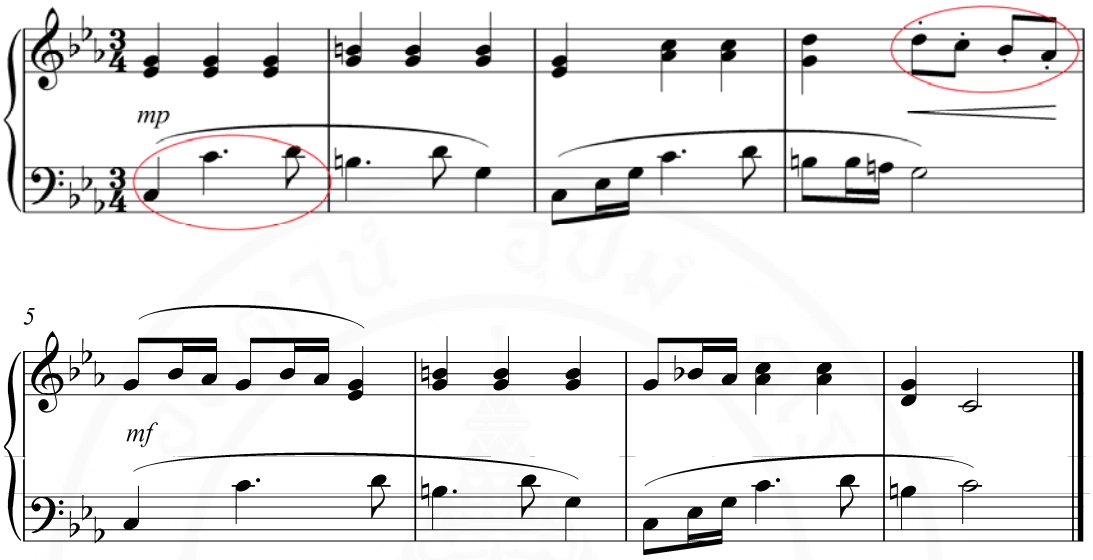
Unit 7: Piece No. 2: Level of mark 2



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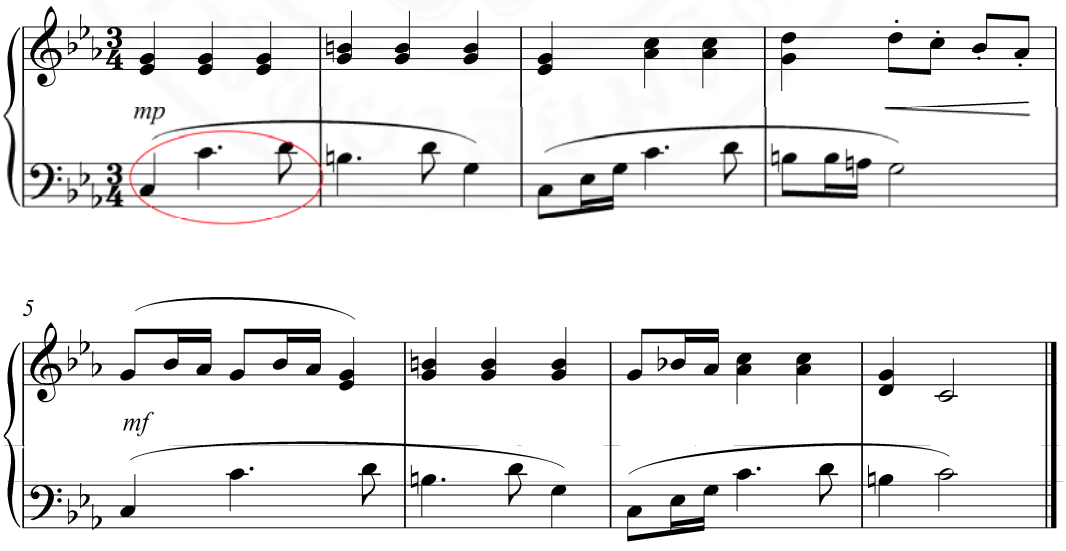

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The assessment form

Name of student……..

Name of teacher……..

Topic	pre1	pre2	pre3	pre4	post1	post2	post3	post4
Note Accuracy								
Random note								
Overall								
Key signature								
End with V-I								
Rhythmic accuracy								
Rhythmic pattern								
Fluency								
Dynamic, Articulation								
Dynamic								
Articulation								

Topic	1.1	1.2	2.1	2.2	2.3	3.1	3.2	3.3
Note Accuracy								
Random note								
Overall								
Key signature								
End with V-I								
Rhythmic accuracy								
Rhythmic pattern								
Fluency								

Topic	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3
Note Accuracy									
Random note									
Overall									
Key signature									
End with V-I									
Rhythmic accuracy									
Rhythmic pattern									
Fluency									
Dynamic, Articulation									
Dynamic									
Articulation									

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Topic	7.1	7.2	7.3	8.1	8.2	8.3	9.1	9.2	9.3
Note Accuracy									
Random note									
Overall									
Key signature									
End with V-I									
Rhythmic accuracy									
Rhythmic pattern									
Fluency									
Dynamic, Articulation									
Dynamic									
Articulation									

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APPENDIX D

SELF-INSTRUCTIONAL PACKAGE

Sequencing thinking cards

1. The pink-sequencing thinking card

Step 1	Look at the time signature.
Step 2	Look at the most complex section of the rhythmic pattern.
Step 3	Establish the suitable tempo.
Step 4	Start clapping, always continue. Don't restart

2. The blue-sequencing thinking card

Step 1	Look at the key signature.
Step 2	Answer a key of this piece.
Step 3	Play scale and cadence.
Step 4	Look at the most complex section of the rhythmic pattern.
Step 5	Look at the most difficult note.
Step 6	Practice in mind.
Step 7	Play scale and cadence again.
Step 8	Establish the suitable tempo with regard as the most complex section of the rhythmic pattern.
Step 9	Start playing, always continue. Don't restart.

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BOOK 1
INTRODUCTION BOOK

Introduction

1. Circle of fifths

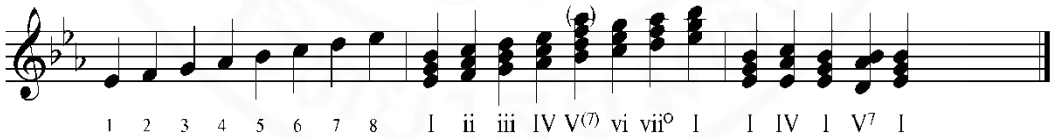
Circle of fifths is an clockwise arrangement of perfect fifth until at the end, the original key is reached again.

Major: C-G-D-A-E-B-F#(Gb)-Db-Ab-Eb-Bb-F-C

Minor Am-Em-Bm-F#m-C#m-G#m-D#m(Ebm)-Bbm-Fm-Cm-Gm-Dm-Am

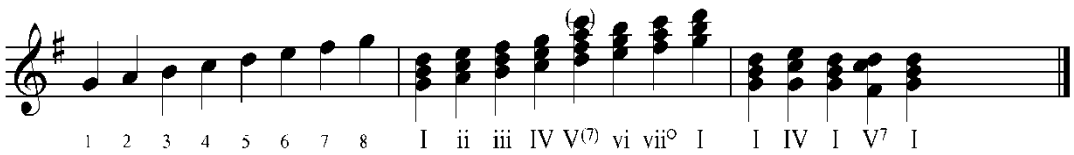
2. Major: Scale, Chord และ Cadence (Review only the keys not exceed than four sharps and flats.

C major scale/ Chord/ Cadence I-IV-I-V7-I



Chord V7 in cadence part is cut the fifth note of the scale in order to remain only three notes same as every chord in cadence. This fifth note in V7 chord is the only one note which can be cut.

G major scale/ Chord/ Cadence I-IV-I-V7-I



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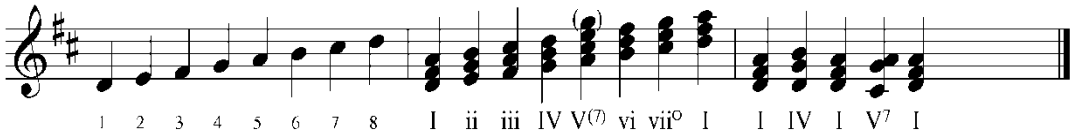
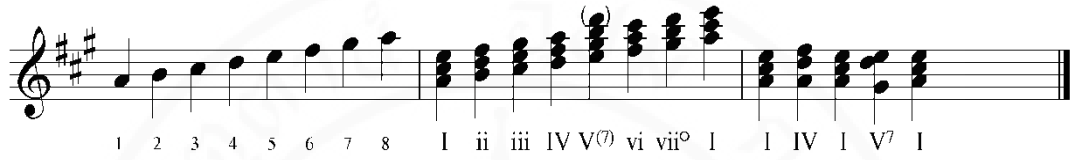
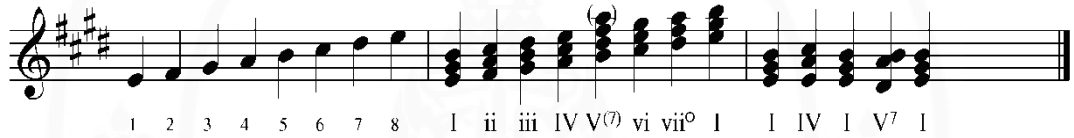
D major scale/ Chord/ Cadence I-IV-I-V7-I



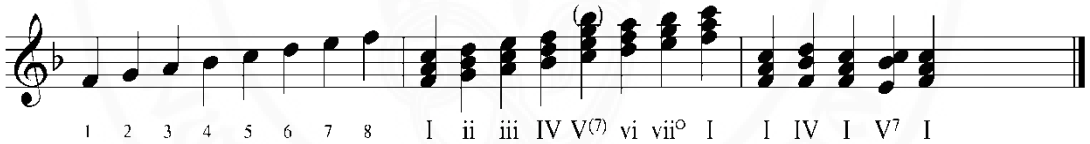
A major scale/ Chord/ Cadence I-IV-I-V7-I



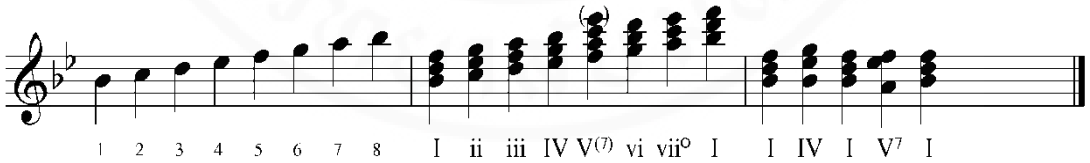
E major scale/ Chord/ Cadence I-IV-I-V7-I



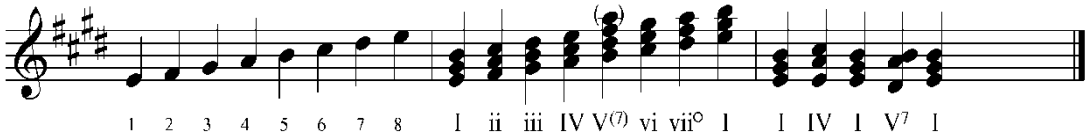
F major scale/ Chord/ Cadence I-IV-I-V7-I



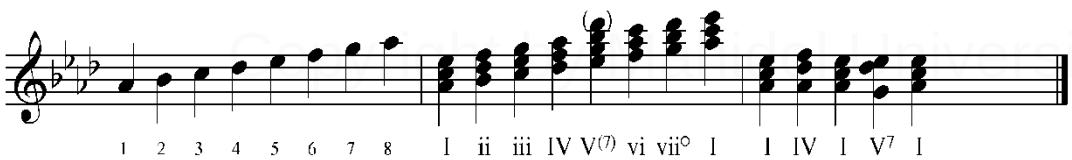
Bb major scale/ Chord/ Cadence I-IV-I-V7-I



Eb major scale/ Chord/ Cadence I-IV-I-V7-I

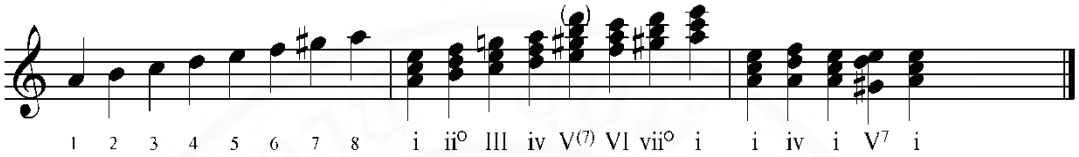


Ab major scale/ Chord/ Cadence I-IV-I-V7-I



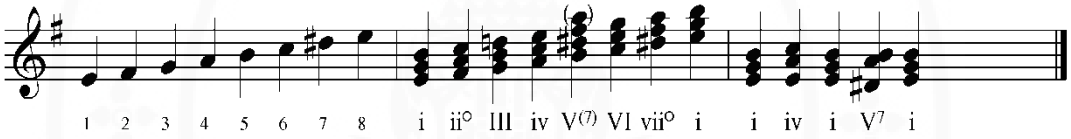
3. Minor: Scale, Chord และ Cadence (Review only the keys not exceed than four sharps and flats.

A harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i

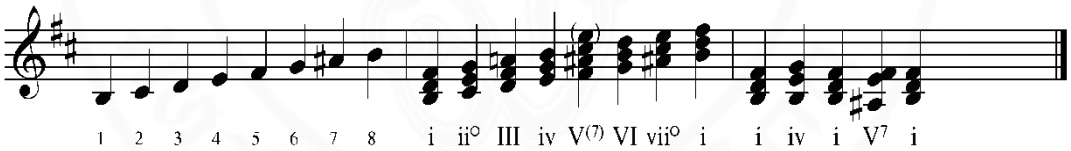


Chord III above is referred to natural minor scale.

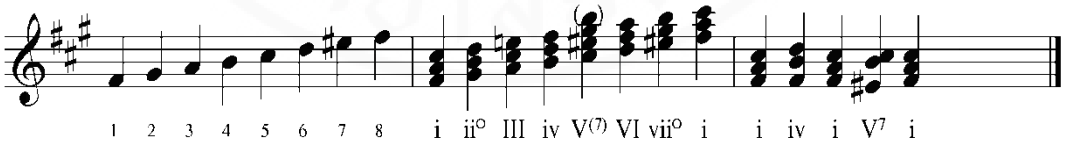
E harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i



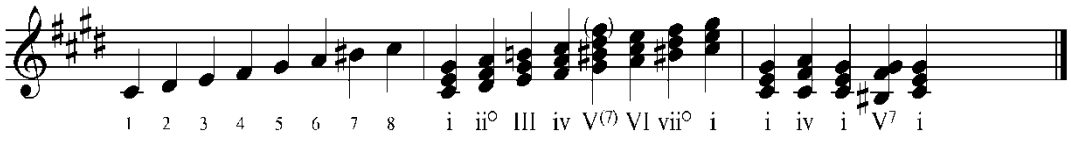
B harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i



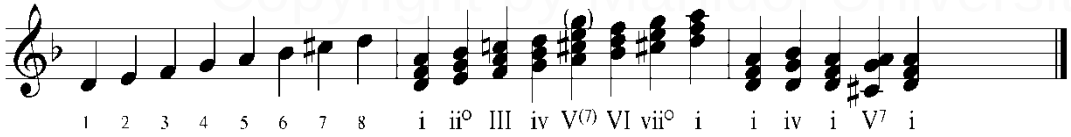
F# harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i



C# harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i



D harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i



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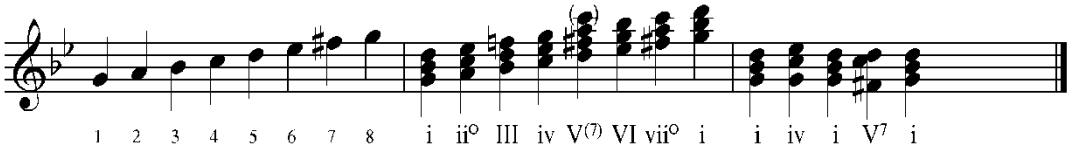
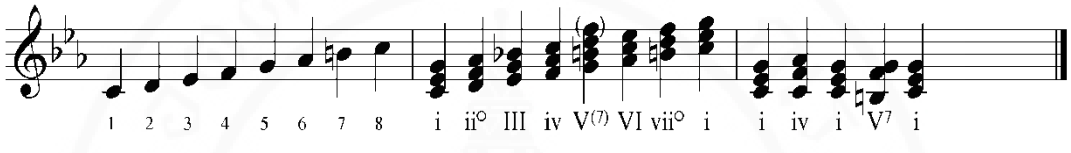
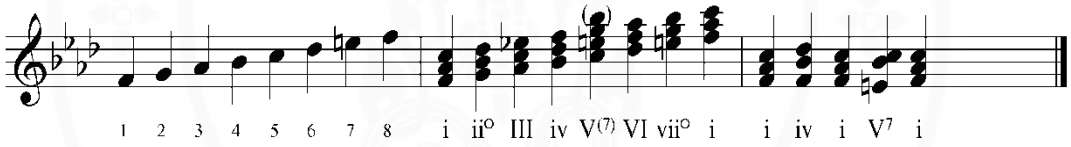
G harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i



C harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i



F harmonic minor scale/ Chord/ Cadence i-iv-i-V7-i



4. Dynamic markings

pp is an abbreviation of Pianissimo	means very softly
p is an abbreviation of Piano	means soft
mp is an abbreviation of Mezzo piano	means moderately soft
mf is an abbreviation of Mezzo piano	means moderately loud
f is an abbreviation of Forte	means loud
ff is an abbreviation of Fortissimo	means very loudly

5. Articulation markings (over or under the notehead)

.	is called	Staccato	means detached
>	is called	Accent	means an emphasis on a particular note
_	is called	Tenuto	means hold note to its full value
⁀	is called	Slur	means play smoothly

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6. Tempo marks

Largo	means	very slow and dignified	
Adagio	means	slow	(Largo-**Andante**-Andante)
Andante	means	moving along	(Adagio-**Andante**)
Moderato	means	moderate	
Allegretto	means	moderately quick	
Allegro	means	merry	
Presto	means	quick	

7. Time signature reading

Time signature consists of two numbers, top and bottom numbers.

The number on top means the numbers of the specified type of note which indicated by the number on bottom

The number on bottom means the type of note such as

2 means half note

4 means quarter note

8 means eighth note

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Supplementary of pitch reading and pitch positioning exercises

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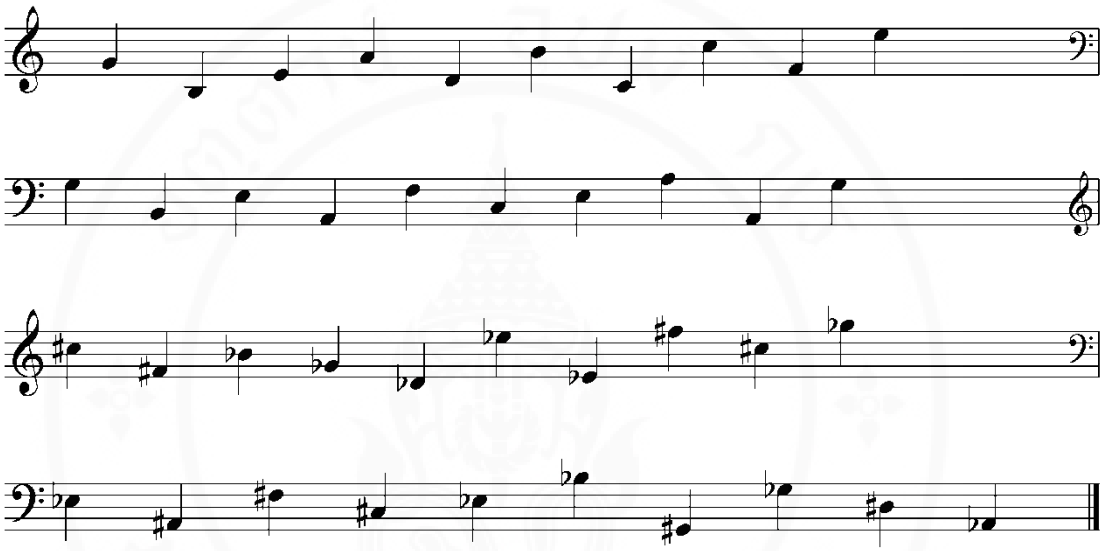

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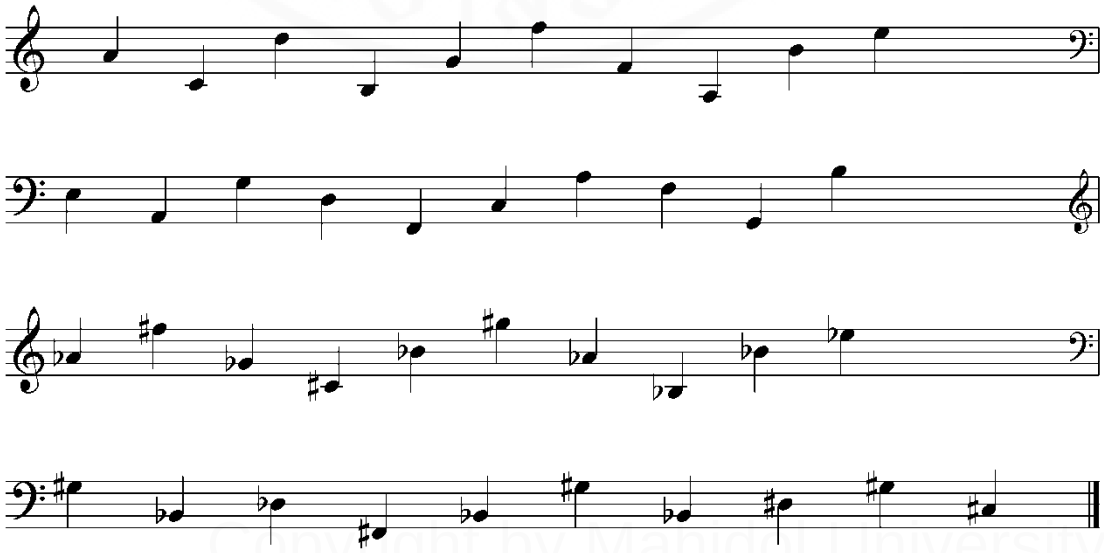

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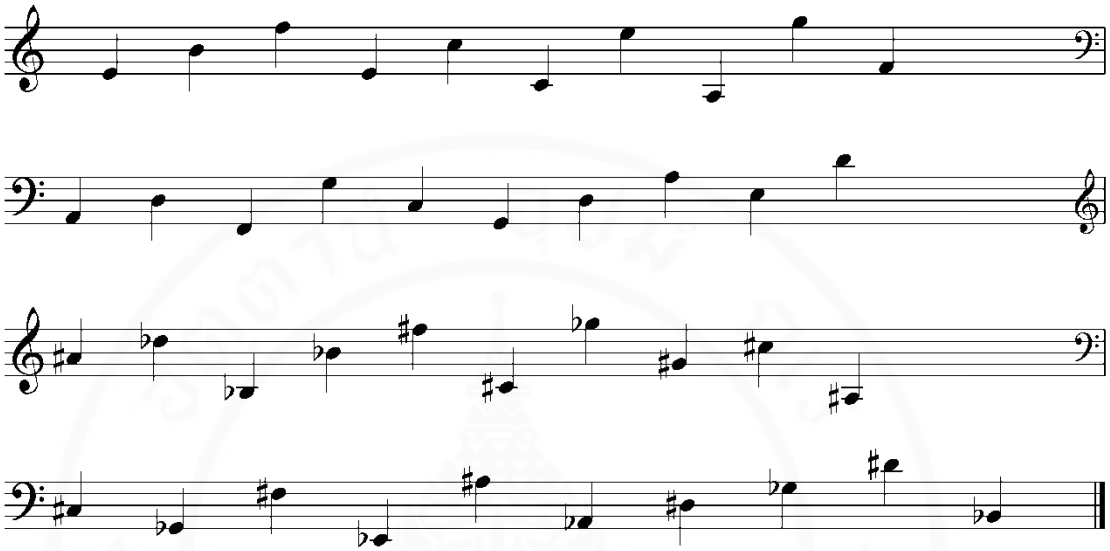

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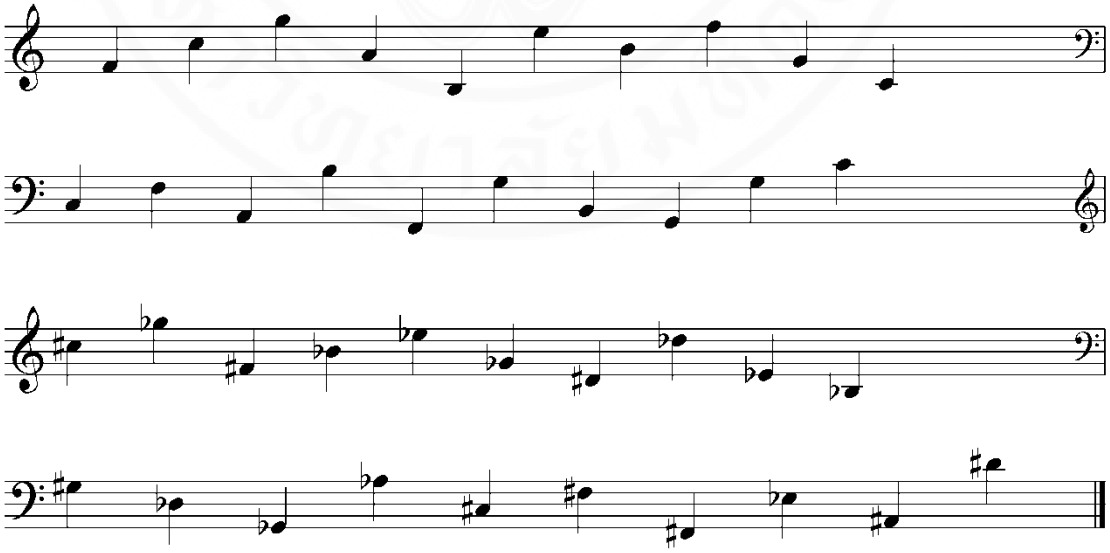

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Unit 2

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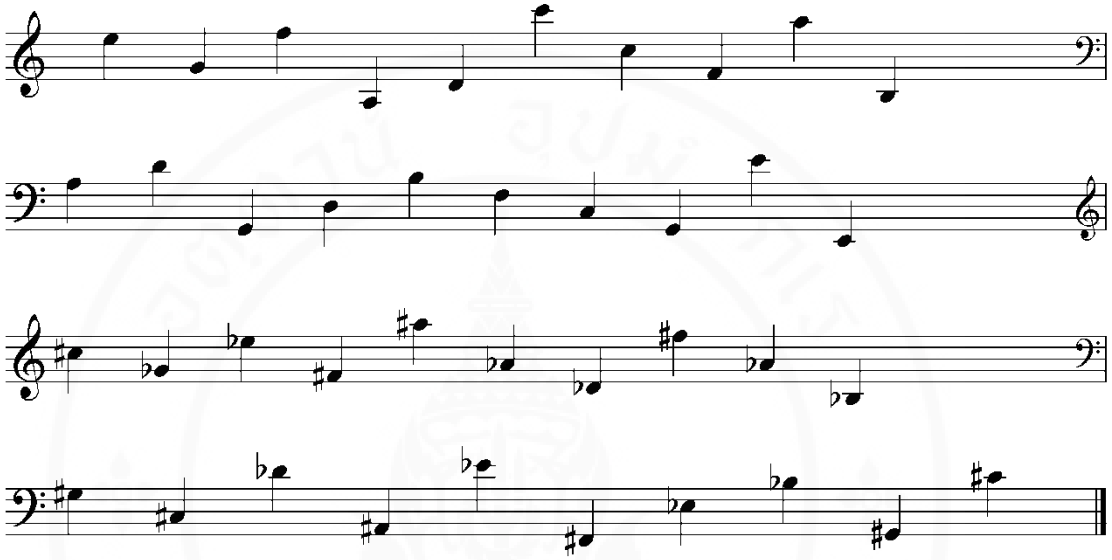

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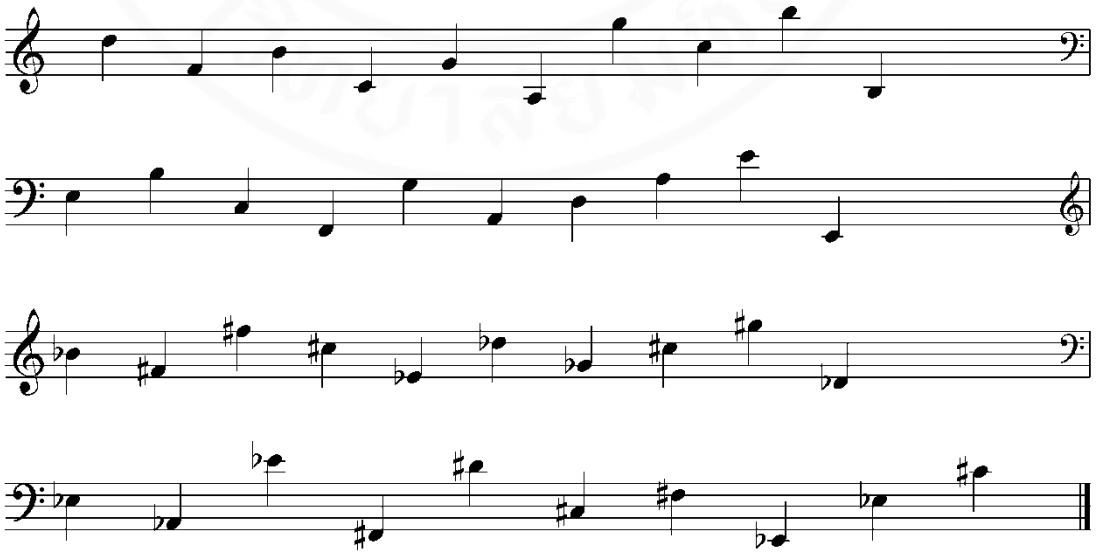

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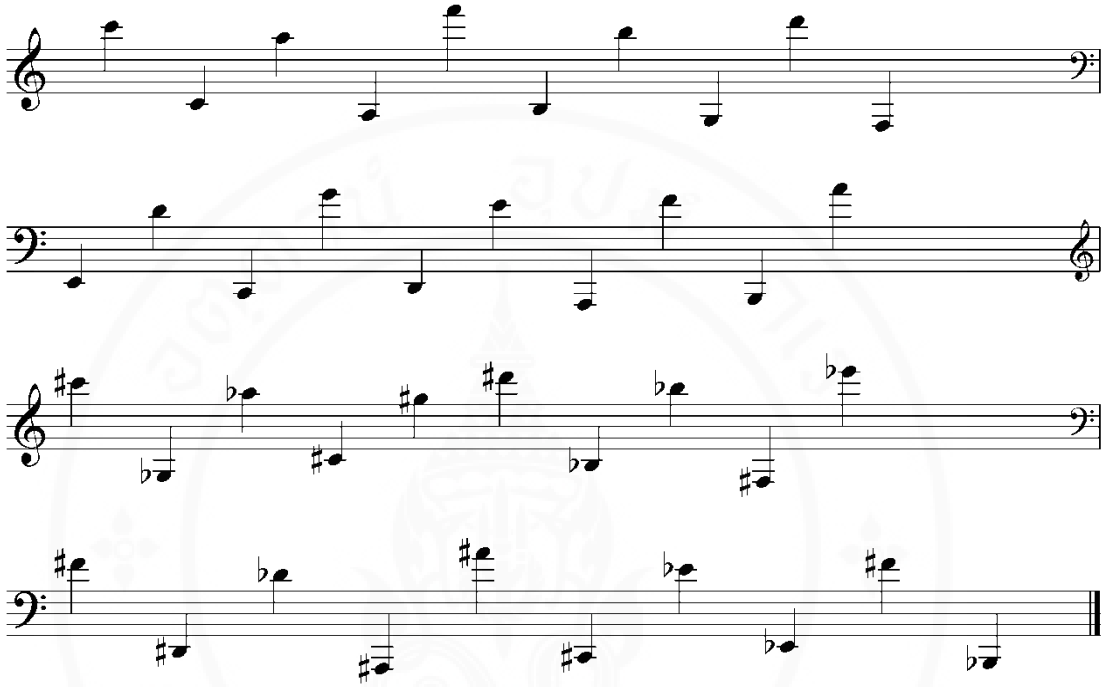

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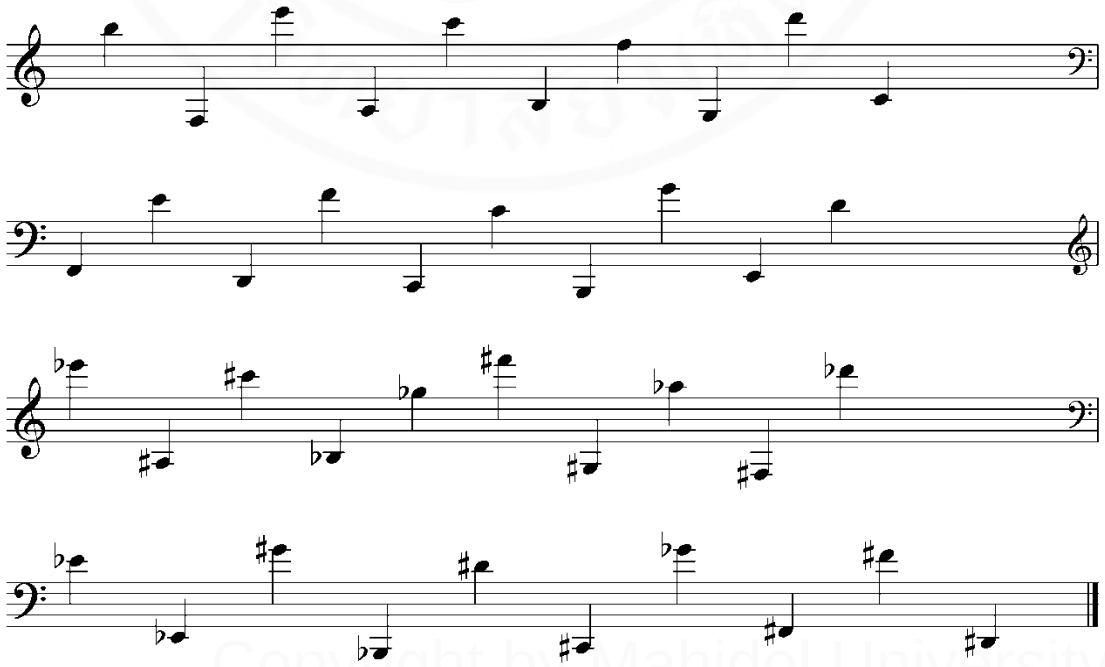

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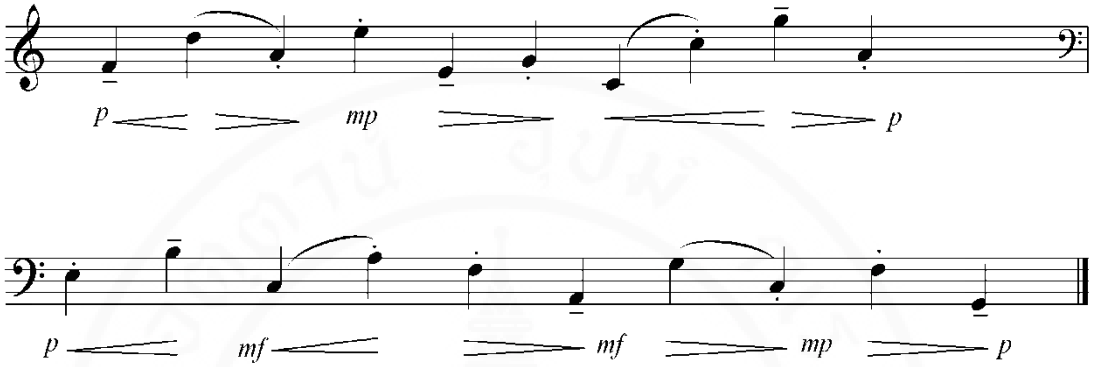

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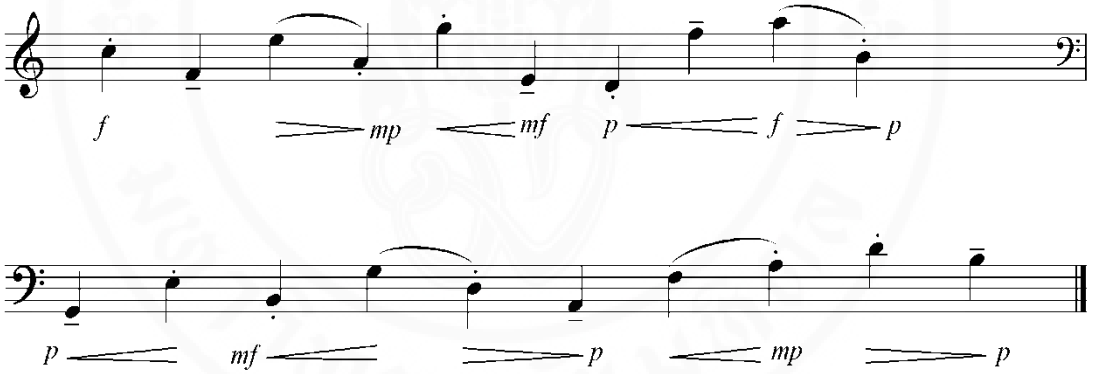

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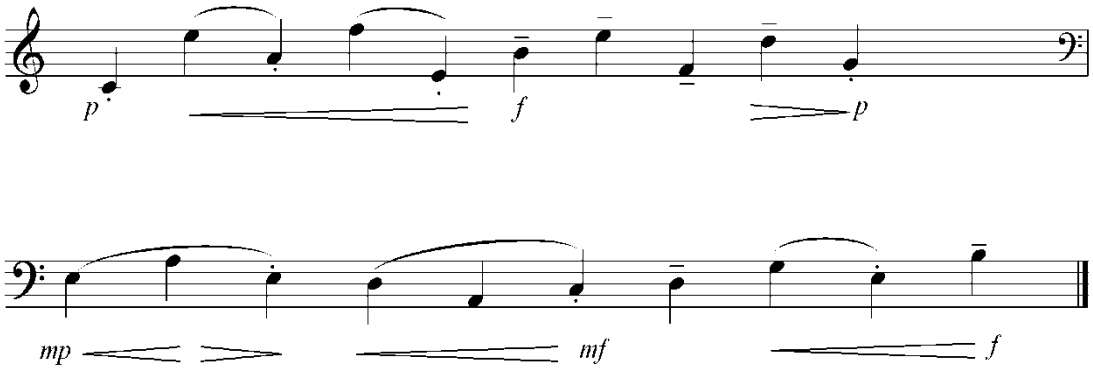

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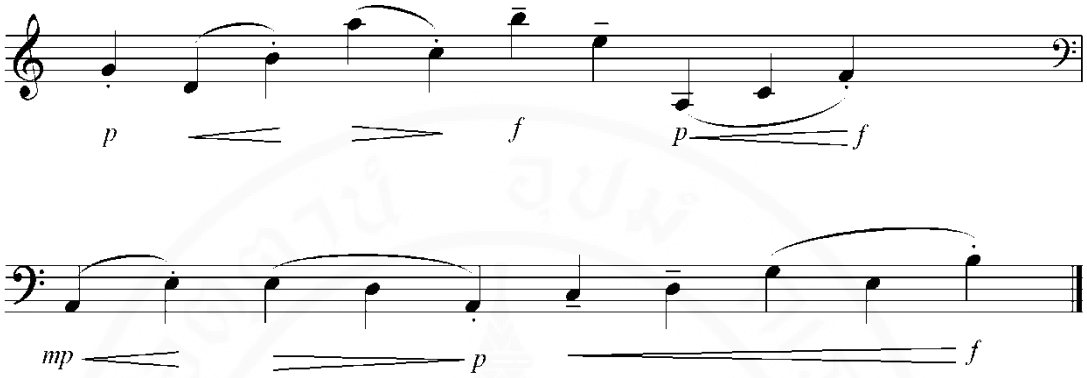

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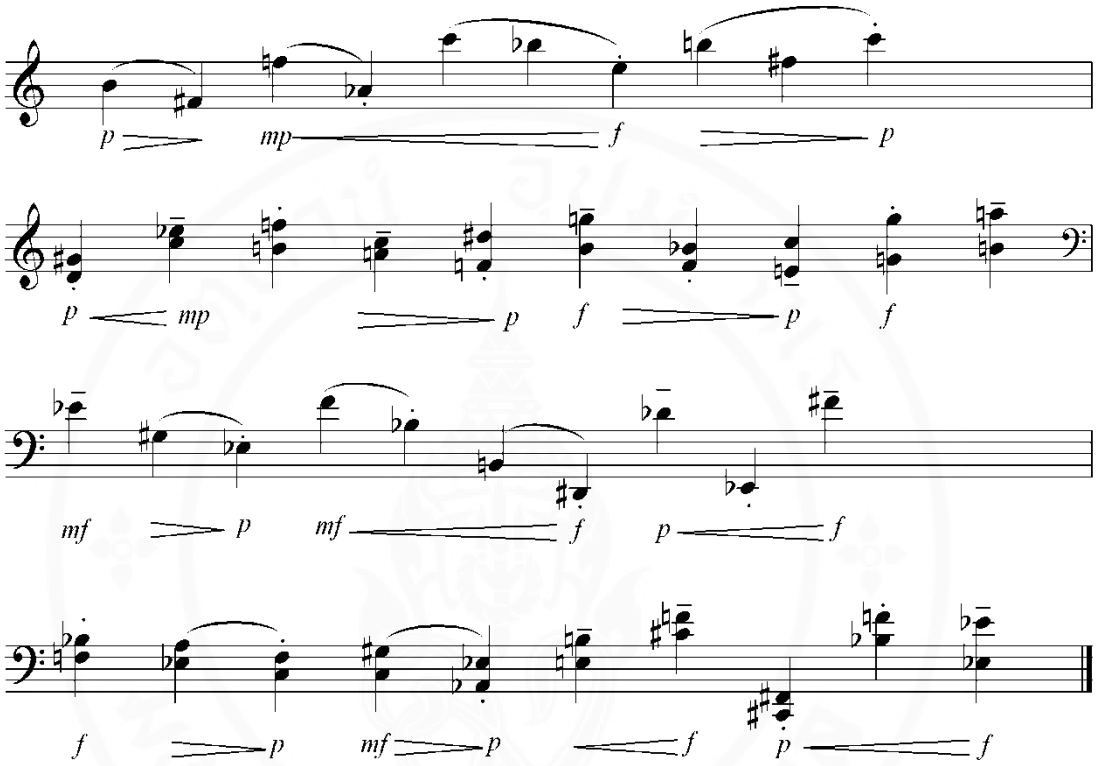

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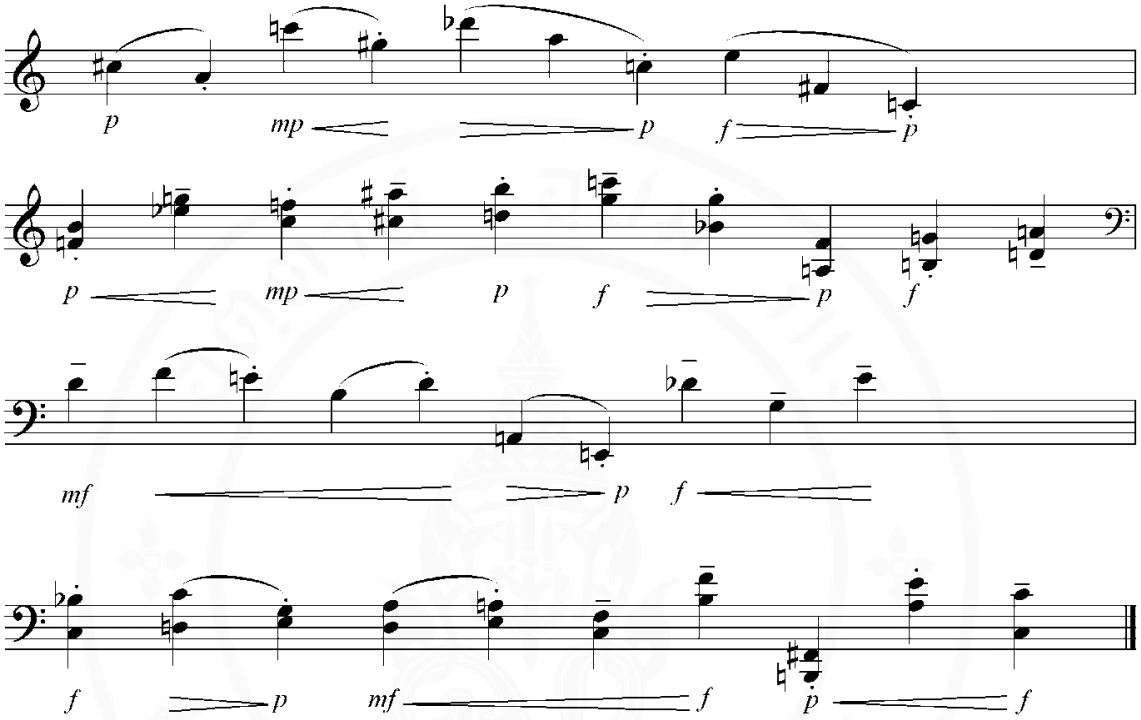

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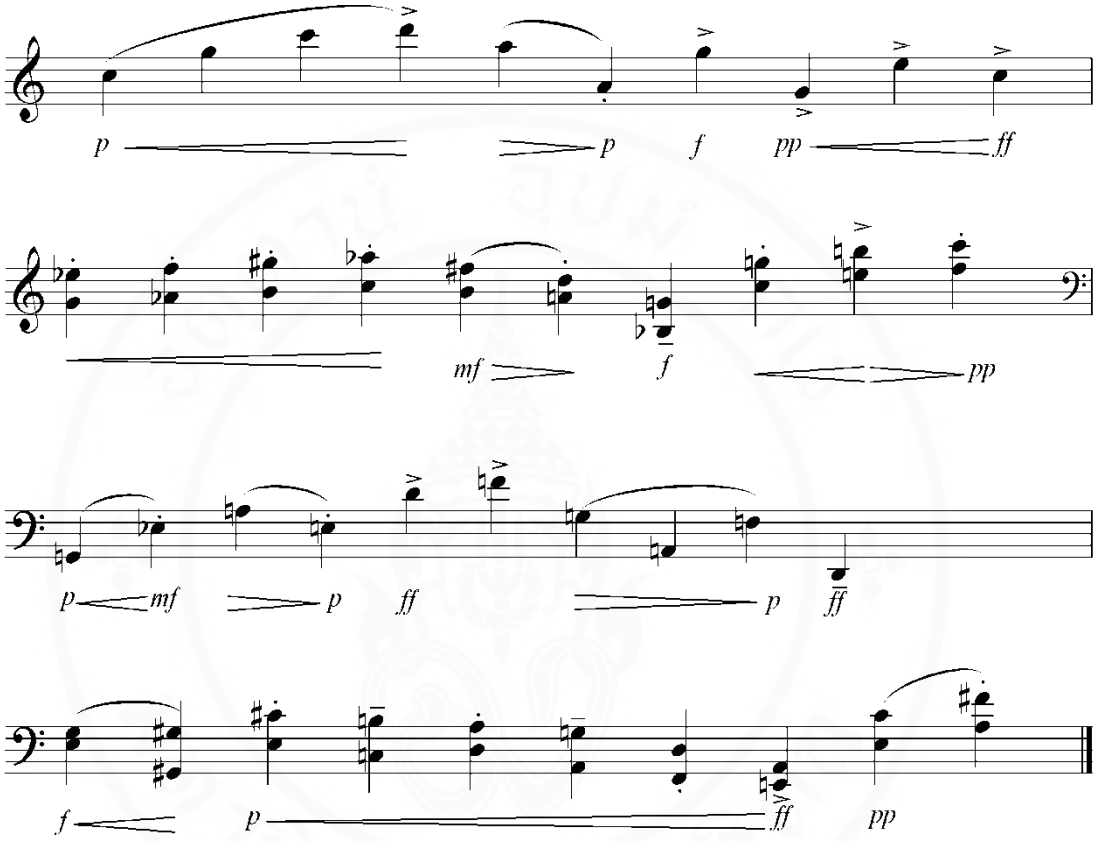

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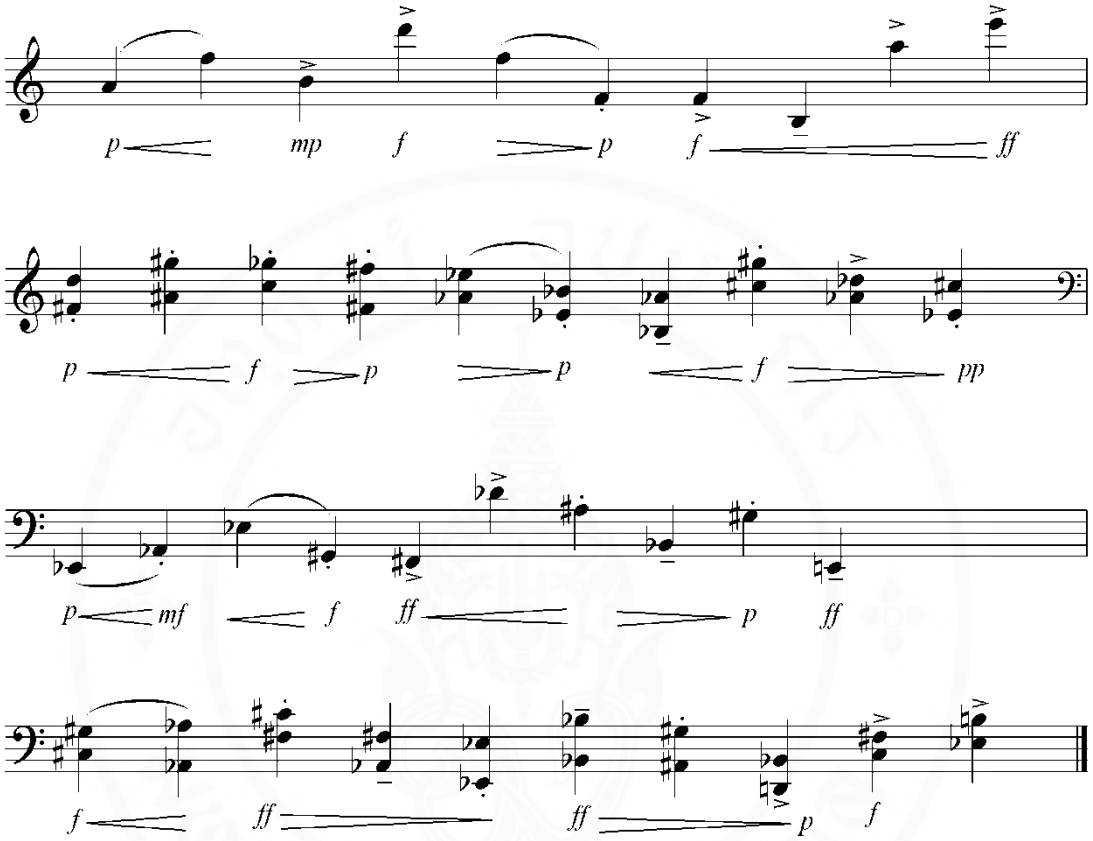

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Unit 7

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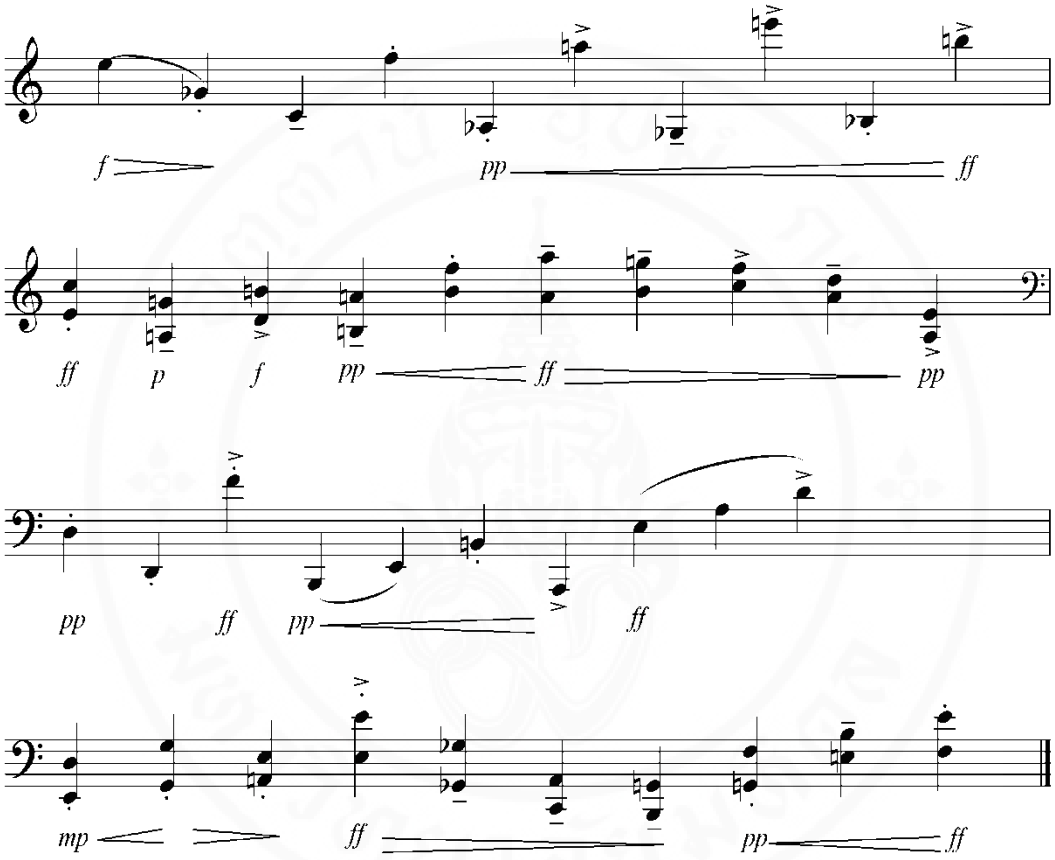

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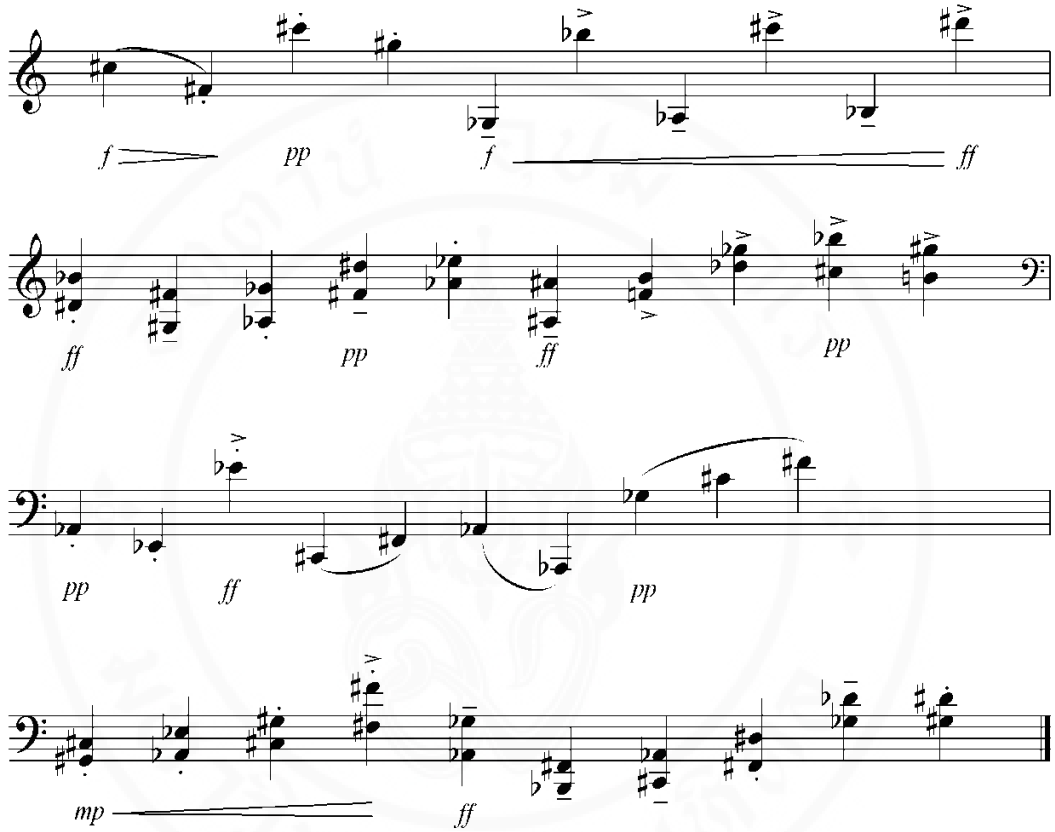

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Unit 8

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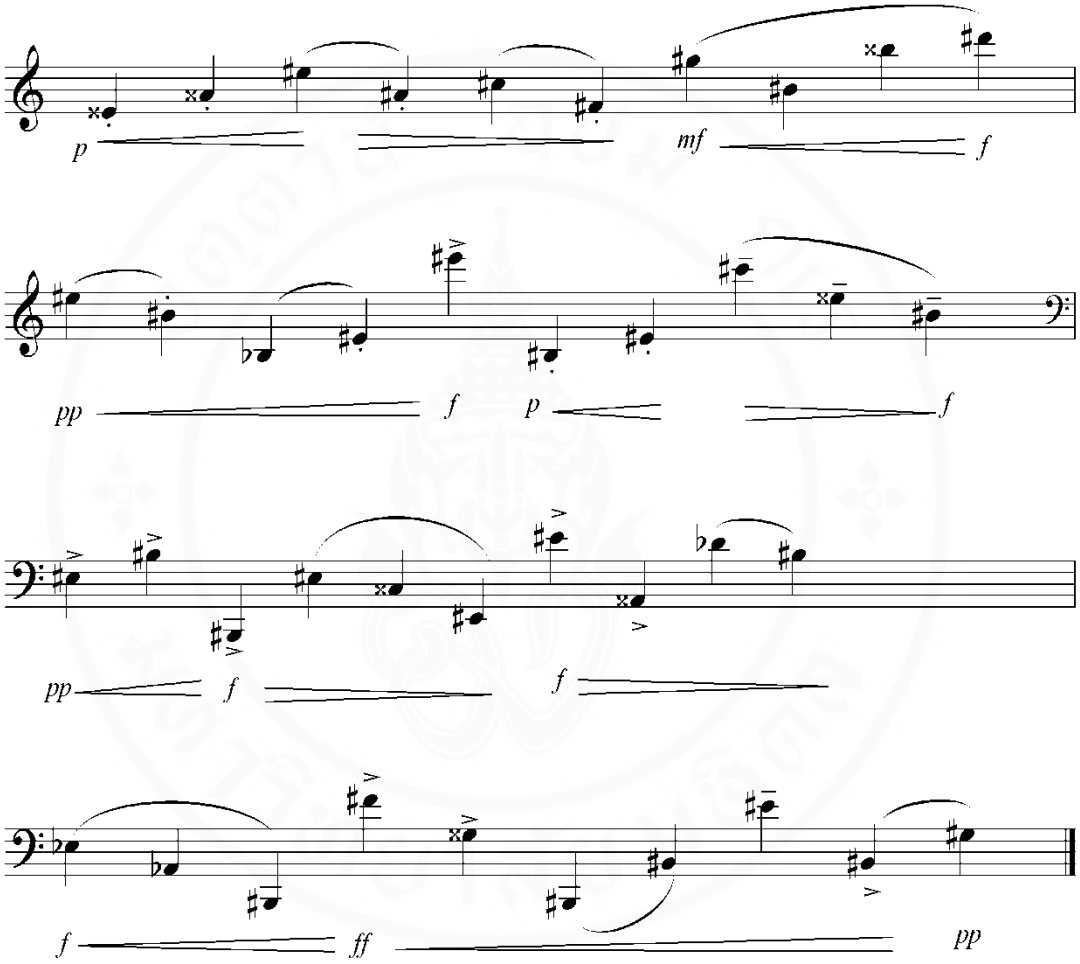

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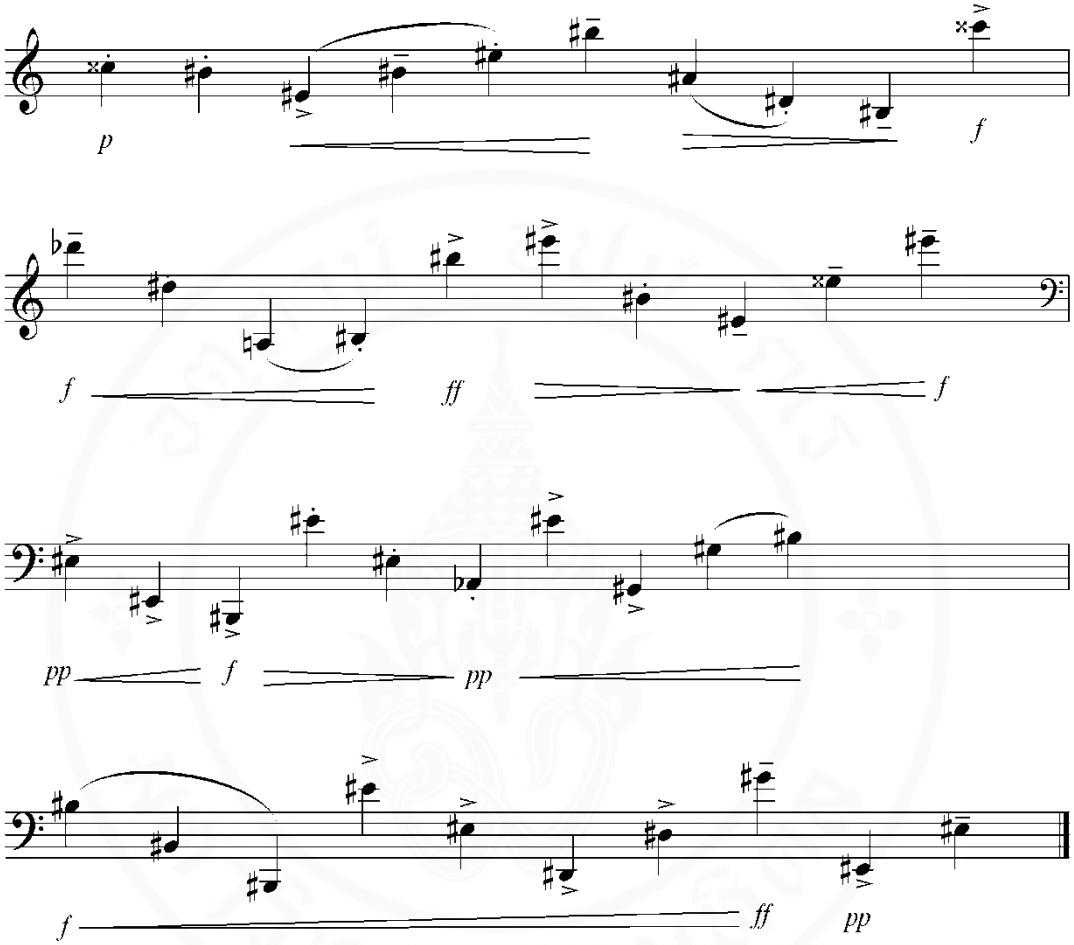

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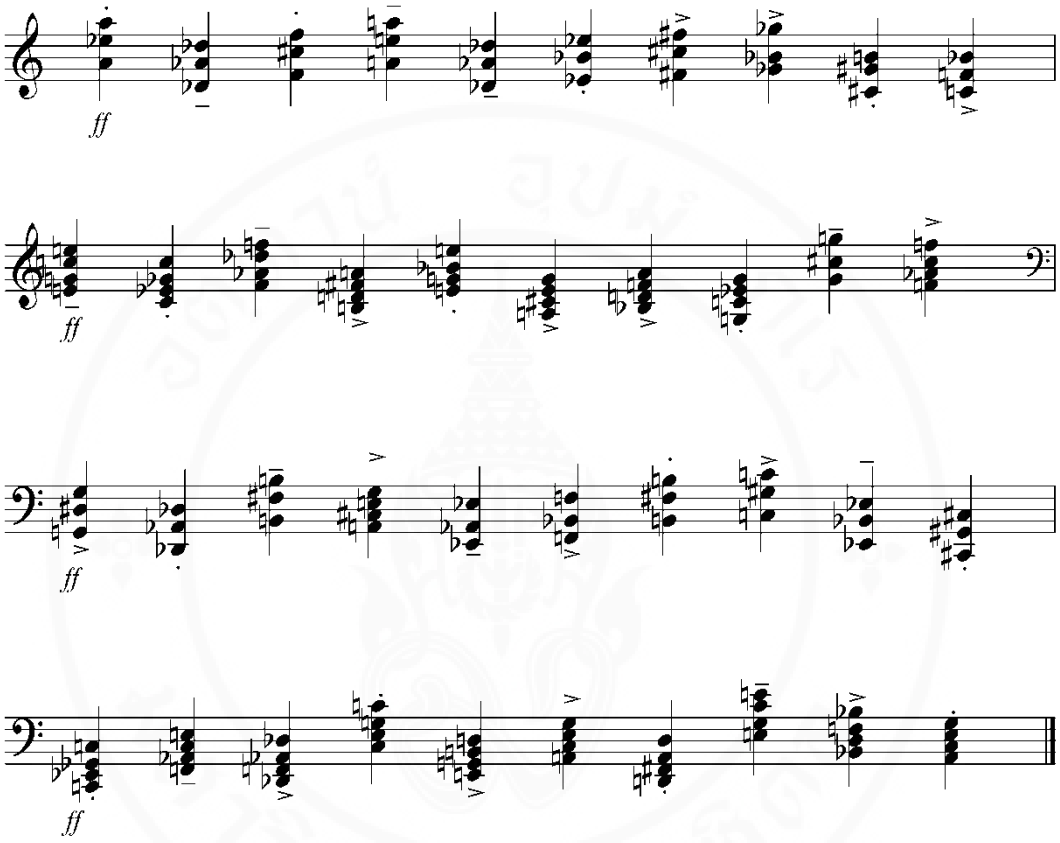

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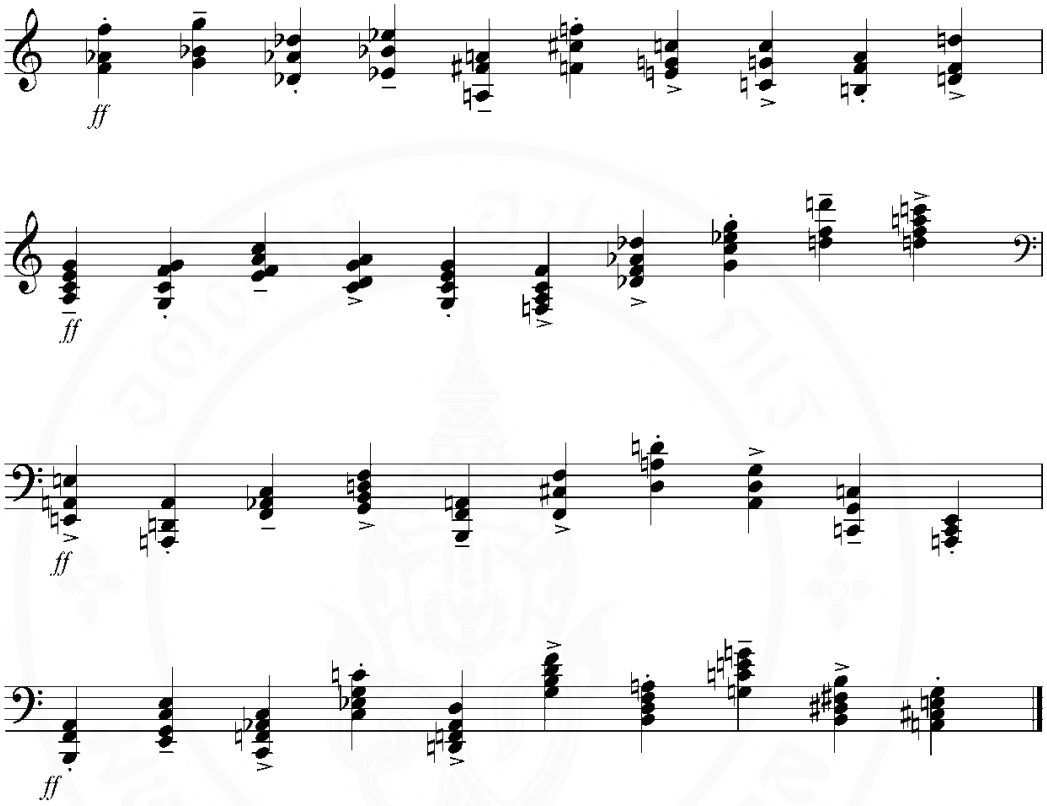

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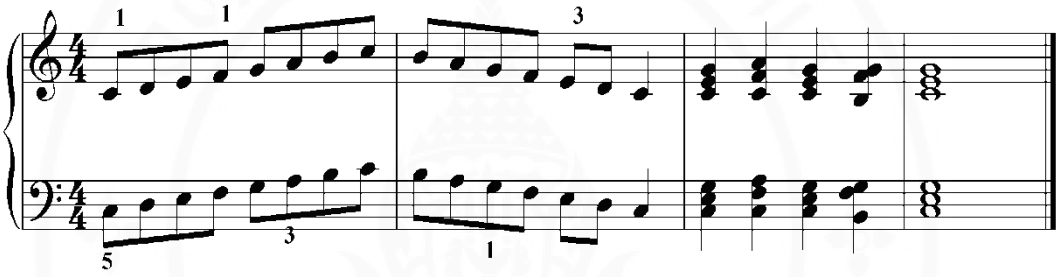
BOOK 2

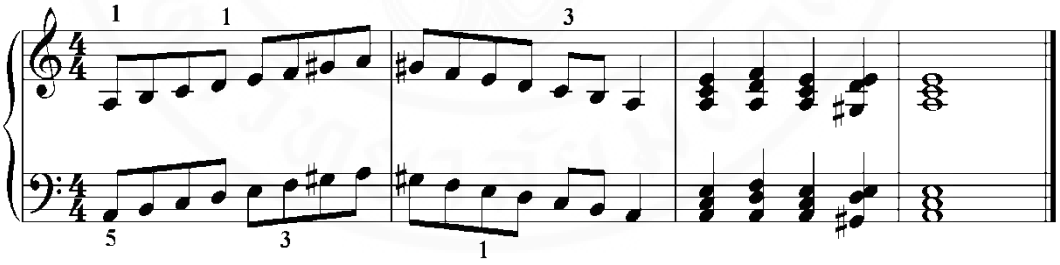
UNIT 1

Unit 1: Review of C major and A minor

Key signature without sharp or flat sign
C major



A harmonic minor



The secret of key specification…
When you see the piece **without** any sharp or flat sign in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of C major and A minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

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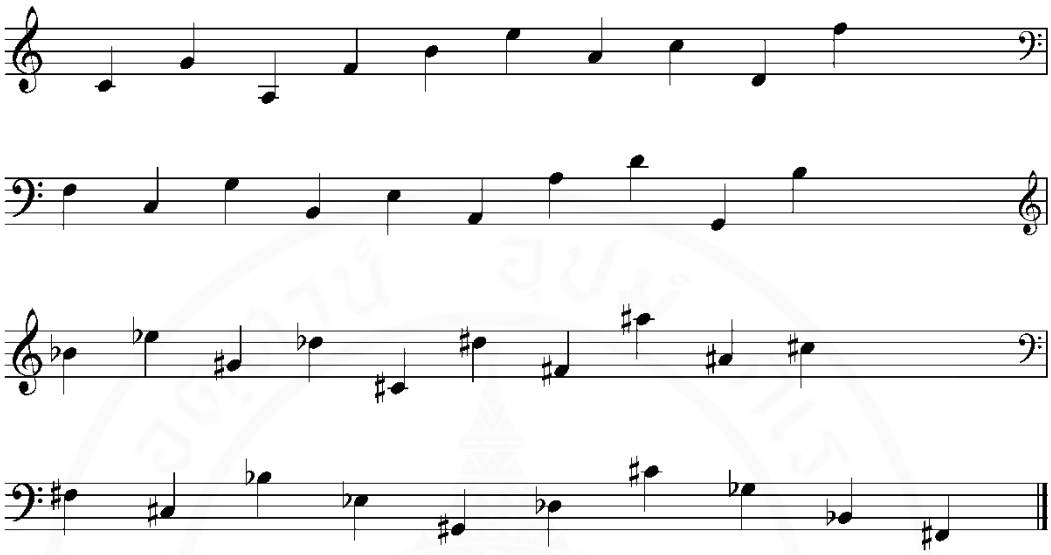
Review of pitch reading and pitch positioning



** More exercises, see the supplementary book.

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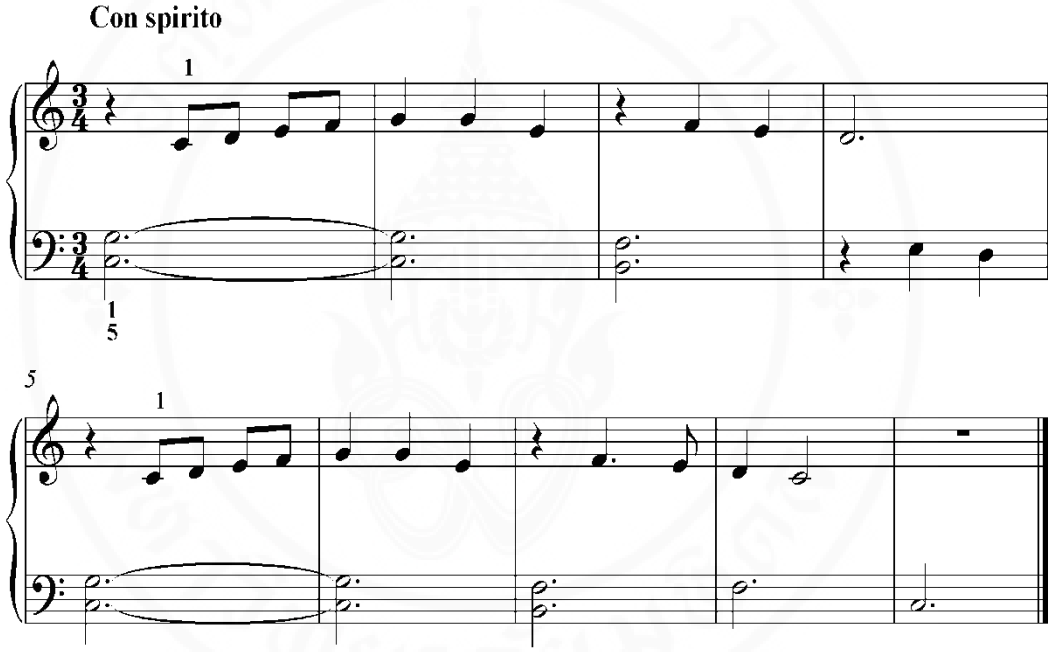
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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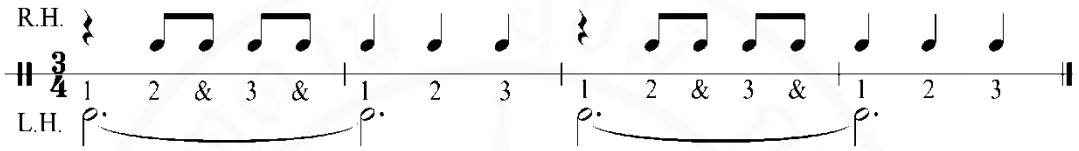
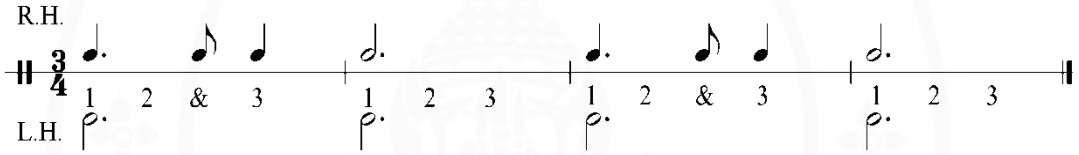
1. Tapping exercises

See the pink card

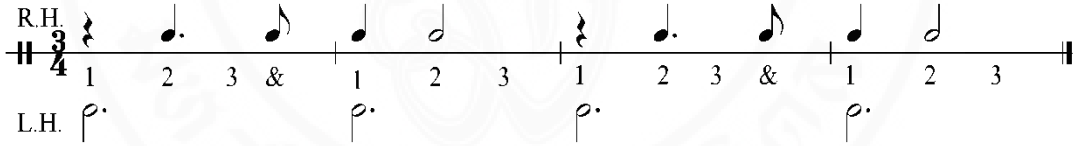
No.1



No.2



No.3



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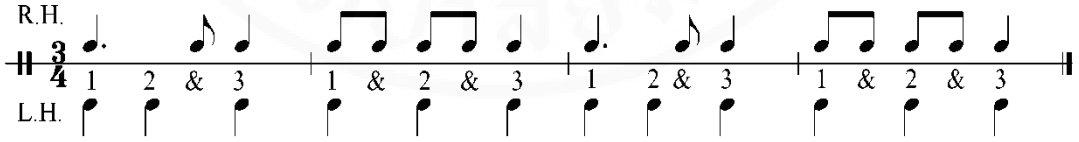

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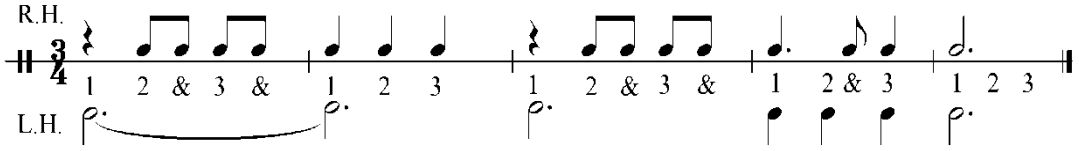

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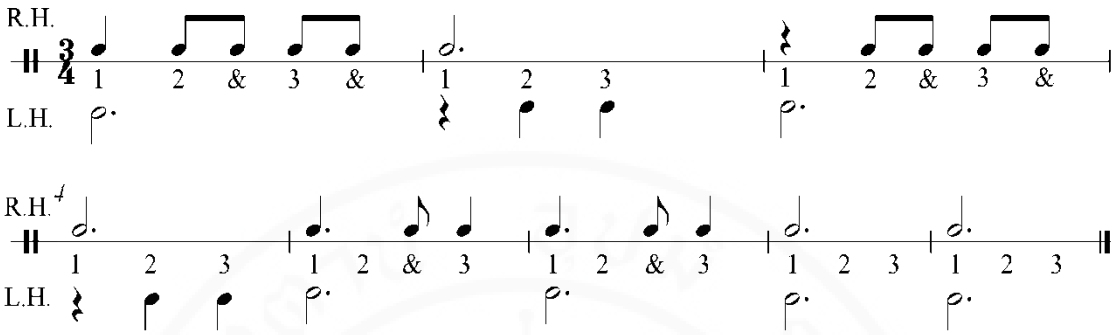
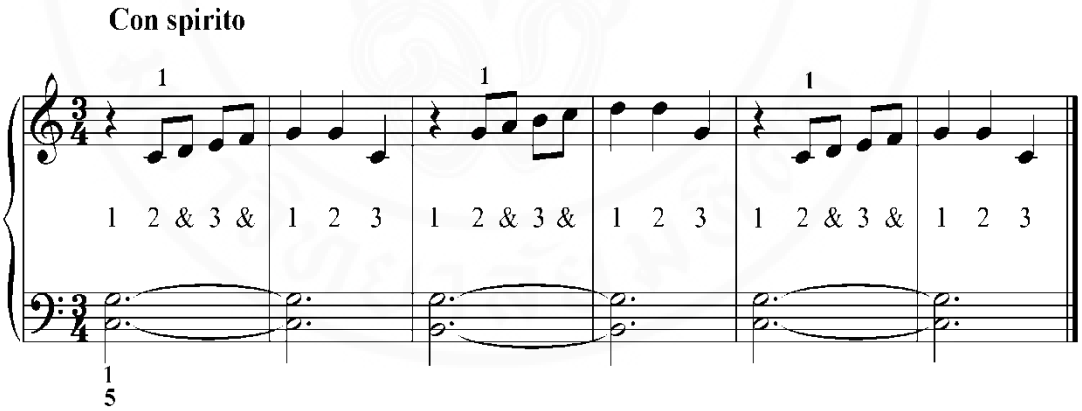
No. 6



2. Exercises

No.1



Con spirito means with spirit

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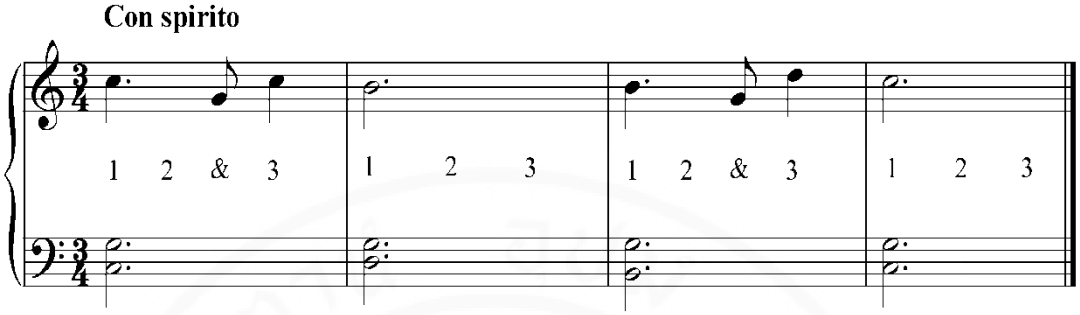
No. 2



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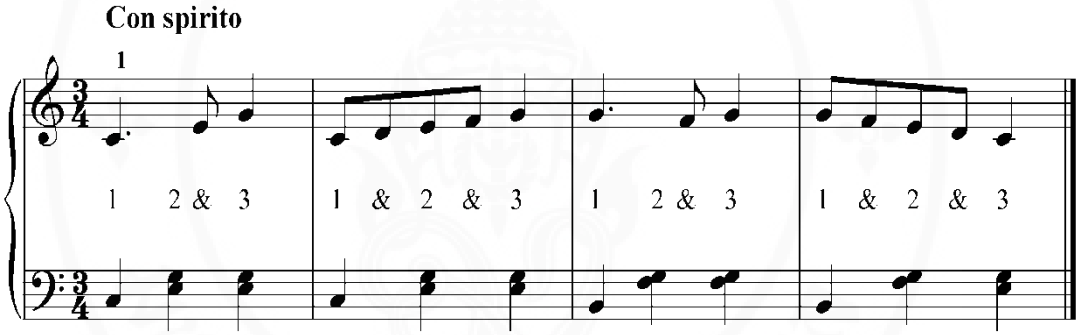

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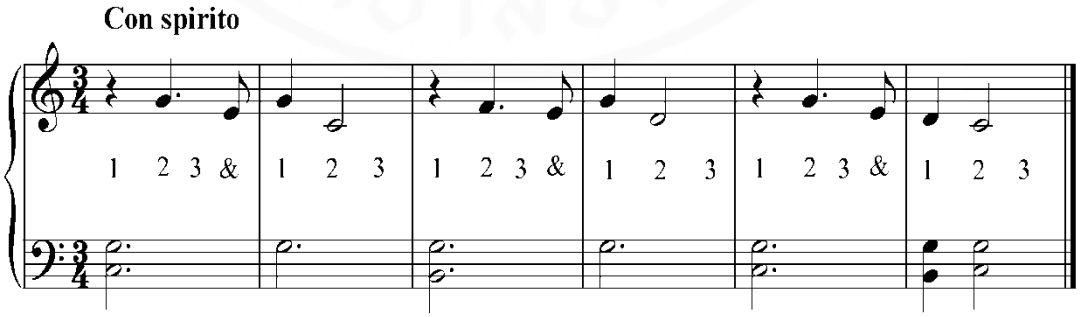

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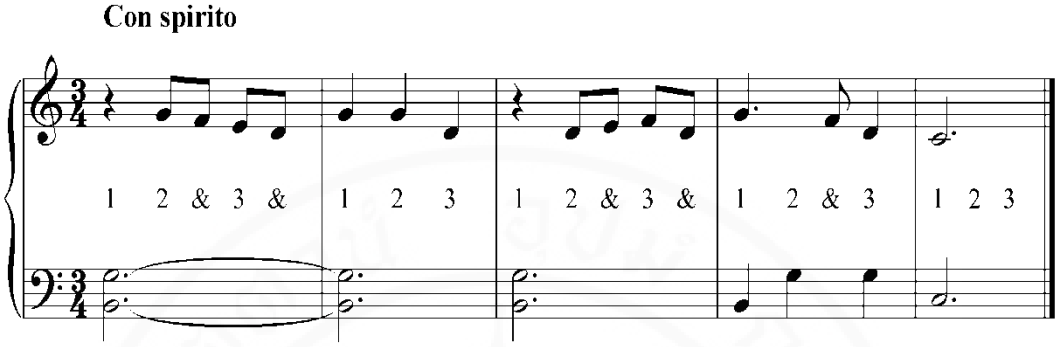
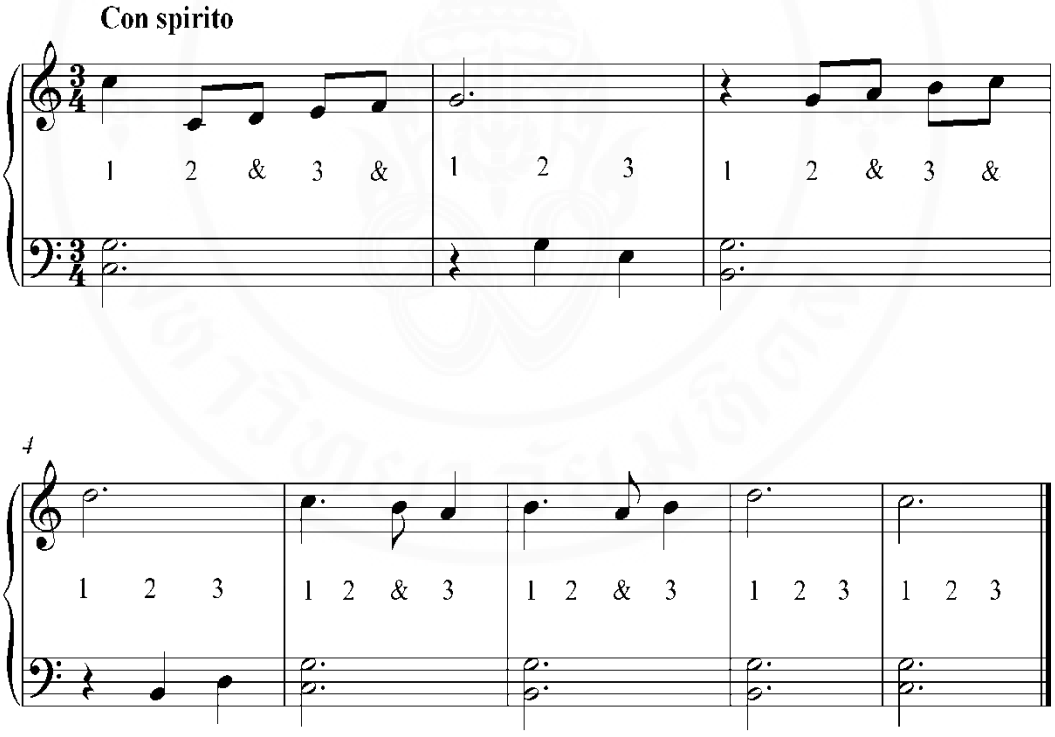
No. 5



No. 6



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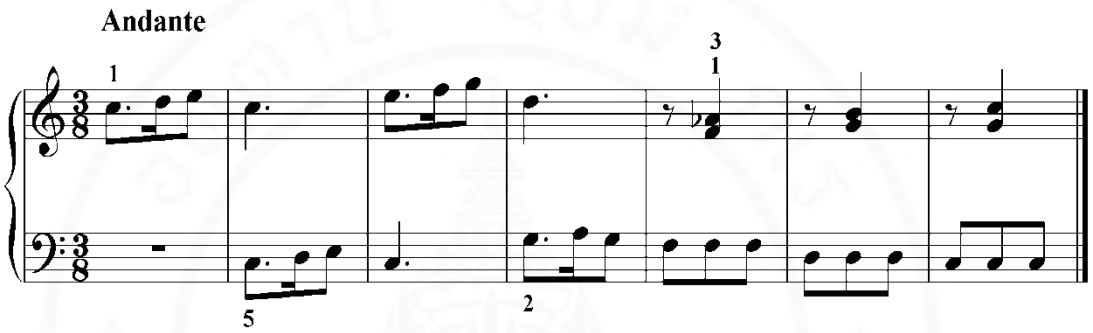
Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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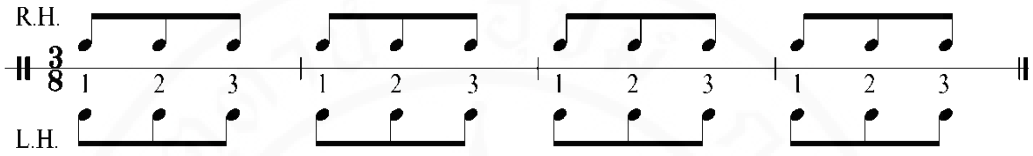
1. Tapping exercises

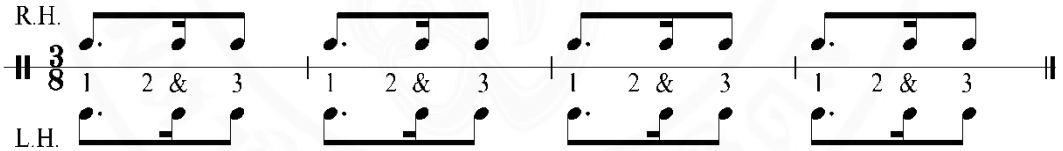
See the pink card

No. 1



-3/8 means three eighth notes in one bar, it is a simple time signature.
- Time signature -3/8 is different from 6/8, 9/8, and 12/8, those are compound time signature.
- When you are doing sight-reading, count the eighth note 1 beat, quarter note 2 beats, and sixteenth note 1/2 beat.

No. 2



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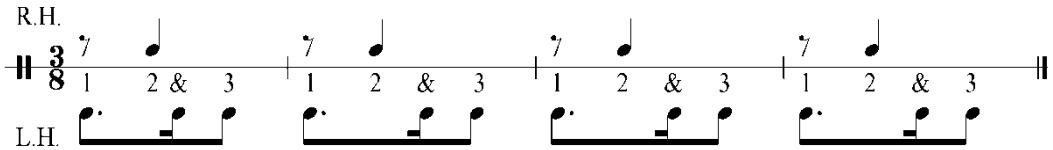

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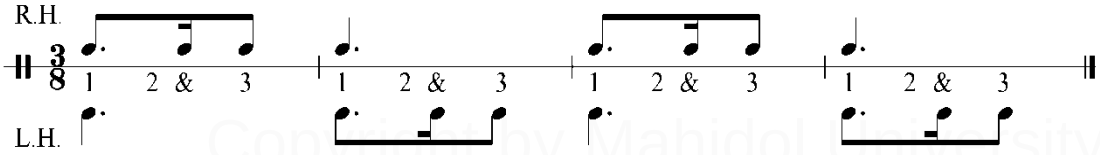

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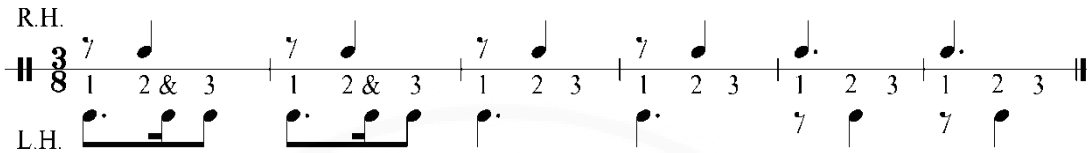

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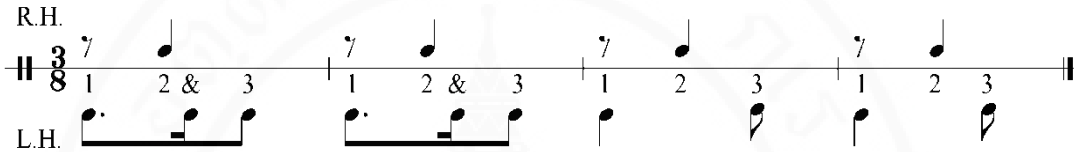

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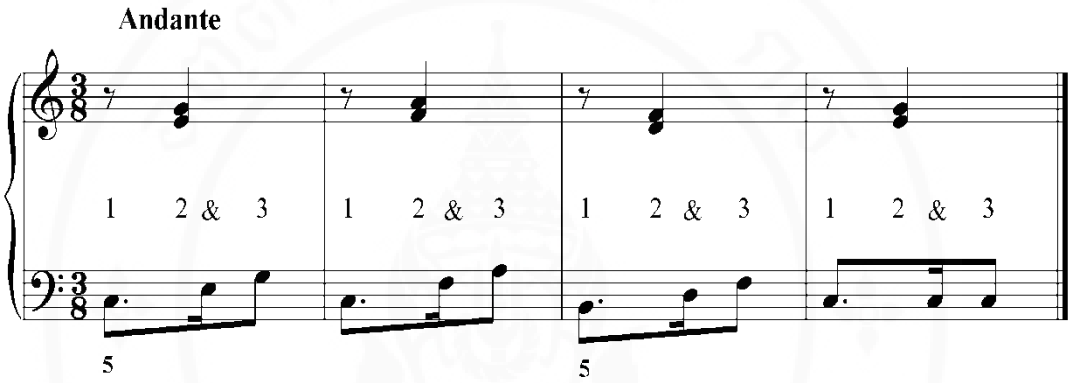
2. Exercises

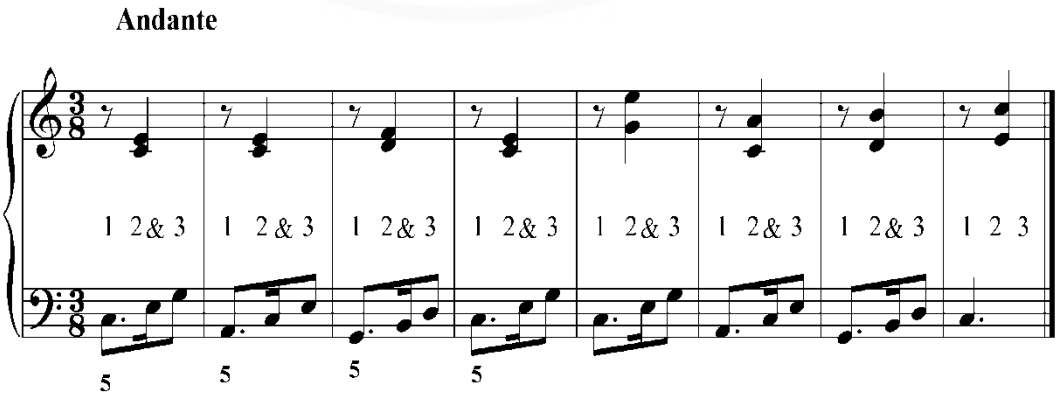
See the blue card

No.1



Andante means moving along, flowing.

No. 2



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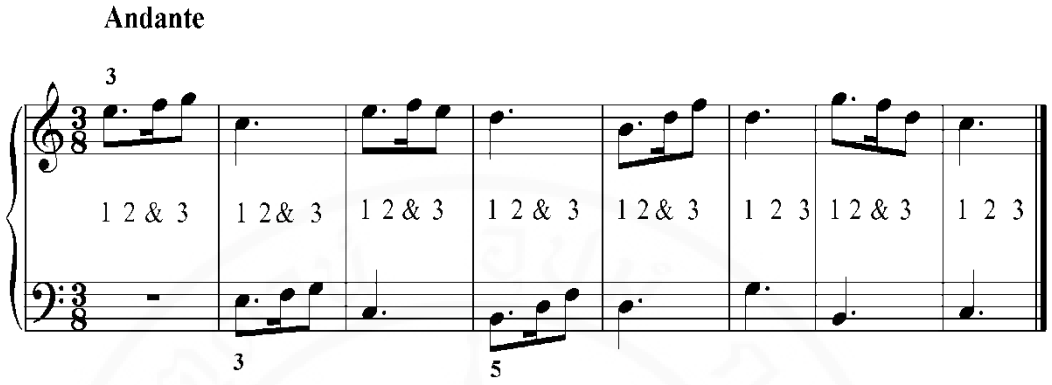
No. 3



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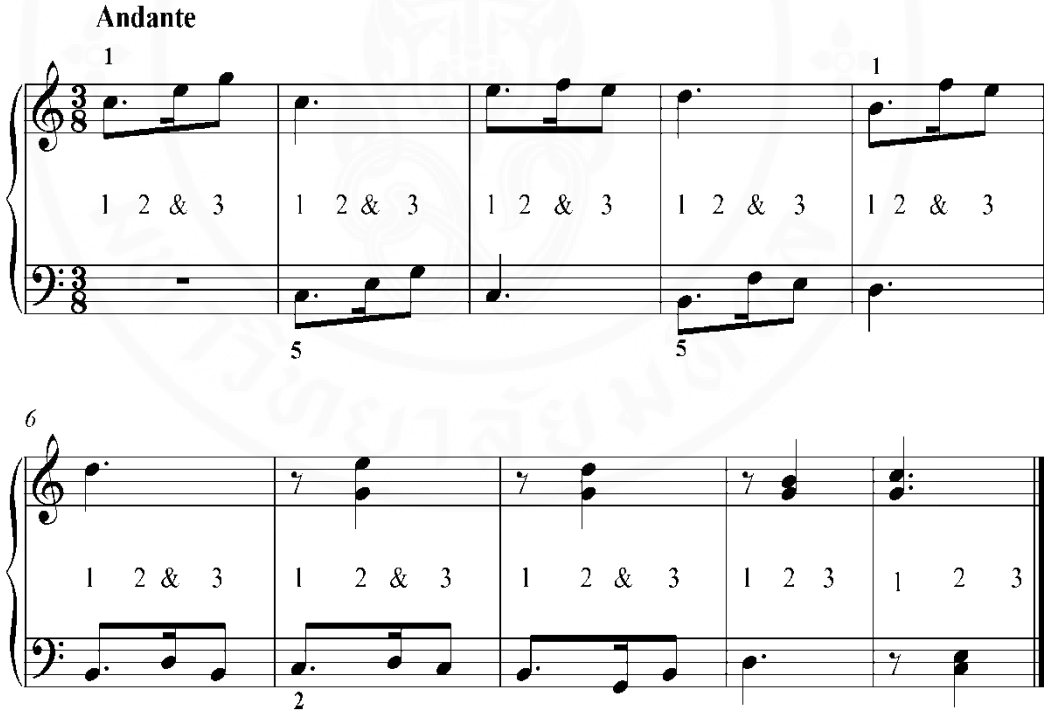

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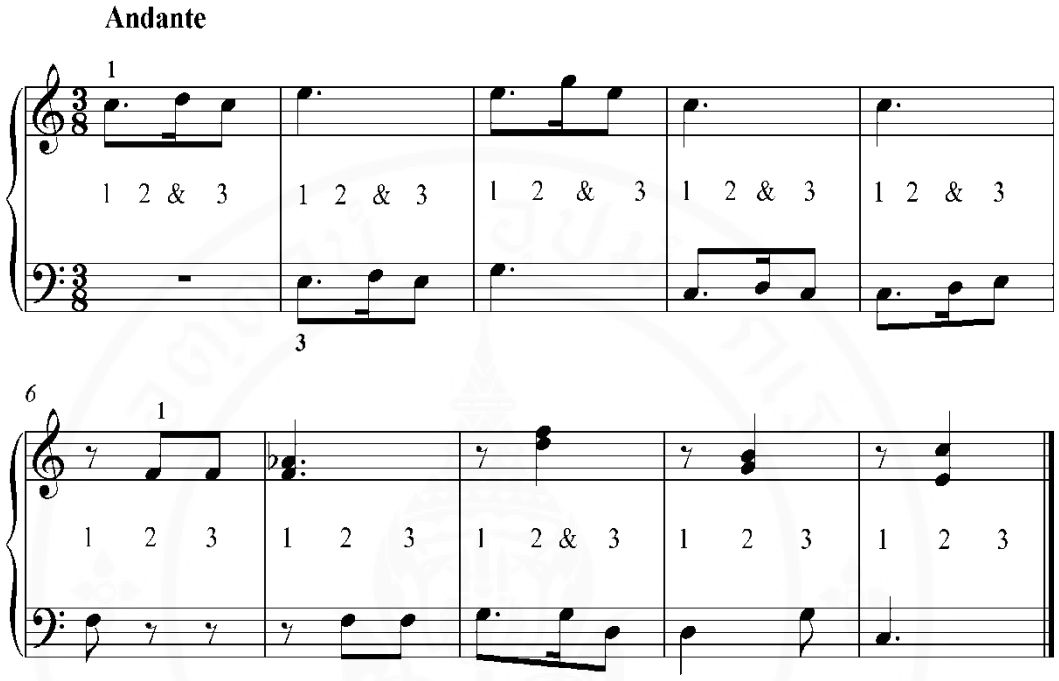

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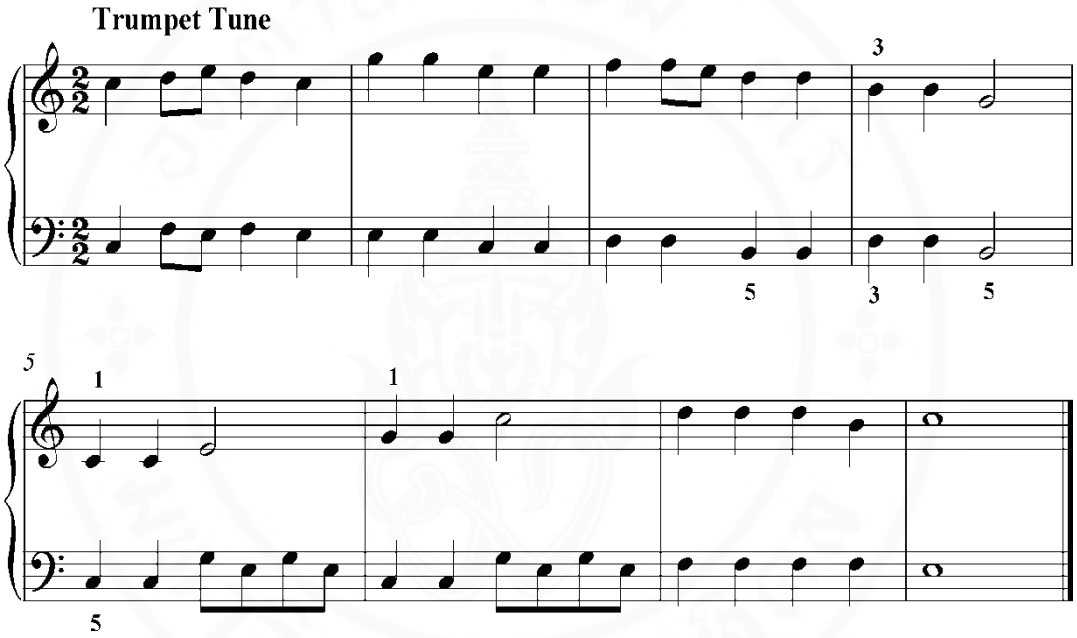
Episode 1.3

Pre/Post-exercise 1.3

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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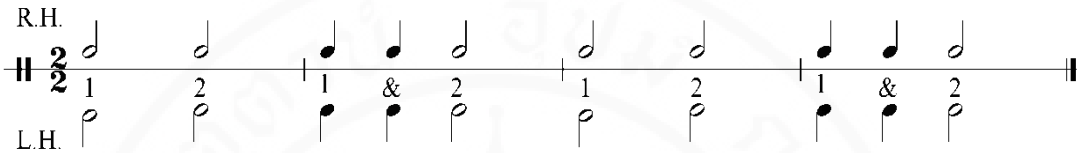
1. Tapping exercises

See the pink card

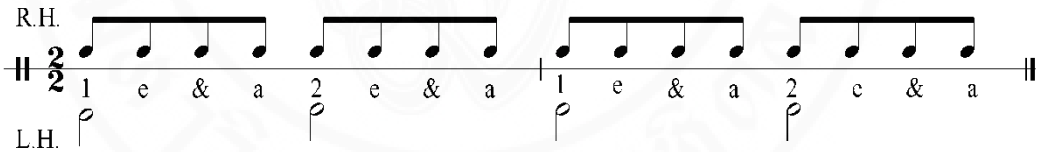
No. 1



2/2 means there are two half notes in one bar, it is same as ¢

In 2/2, count half note 1 beat, quarter note 1/2 beat, and eight note 1/4 beat.

No. 2



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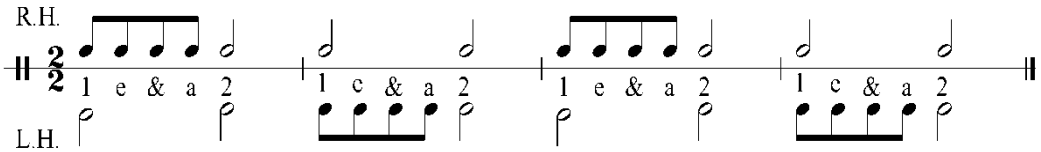

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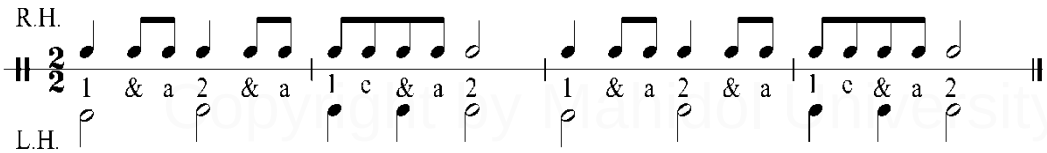

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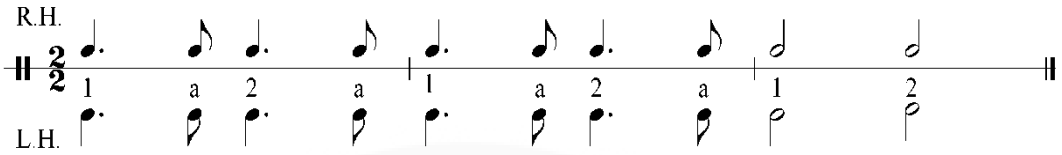

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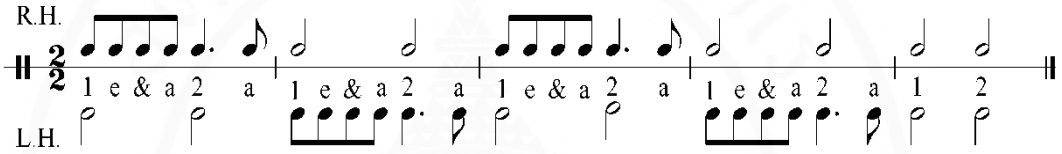

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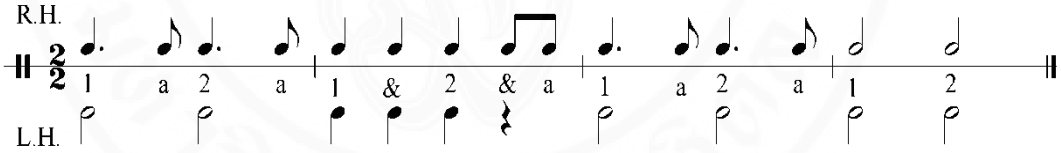

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2. Exercises

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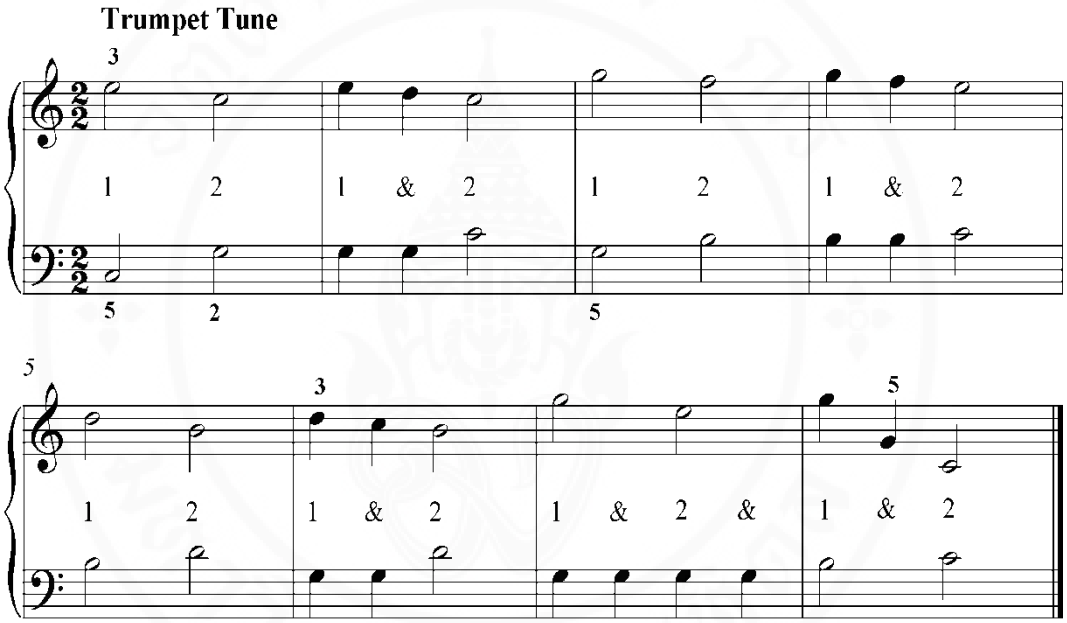
No. 1



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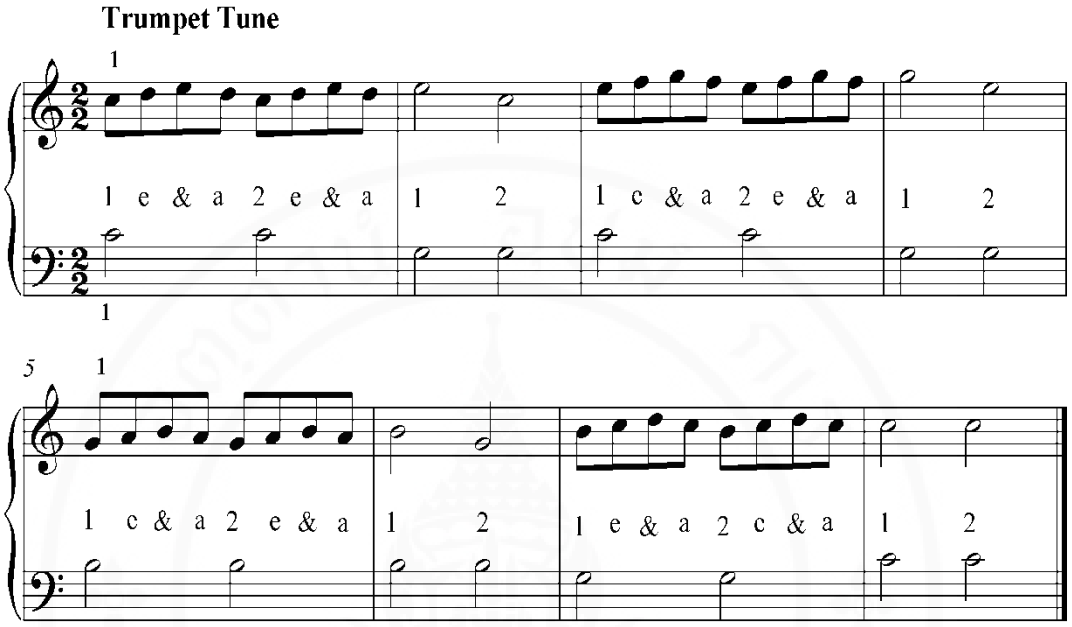
No. 2



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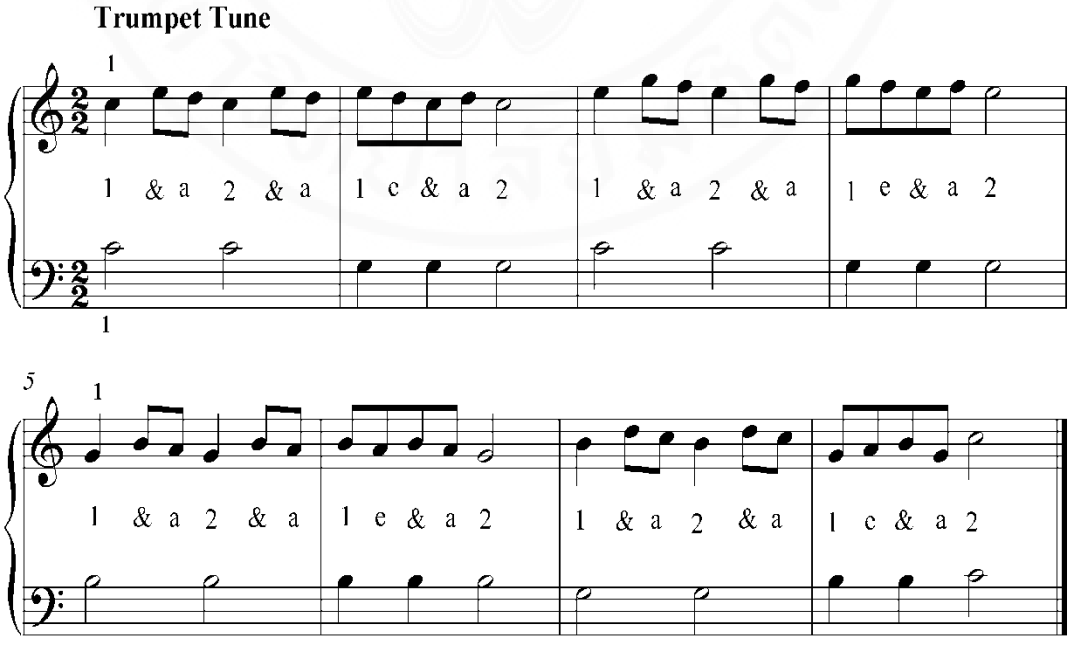

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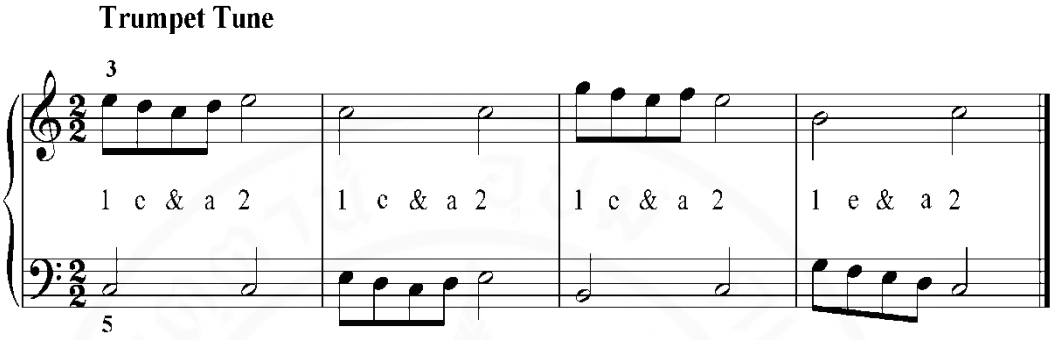

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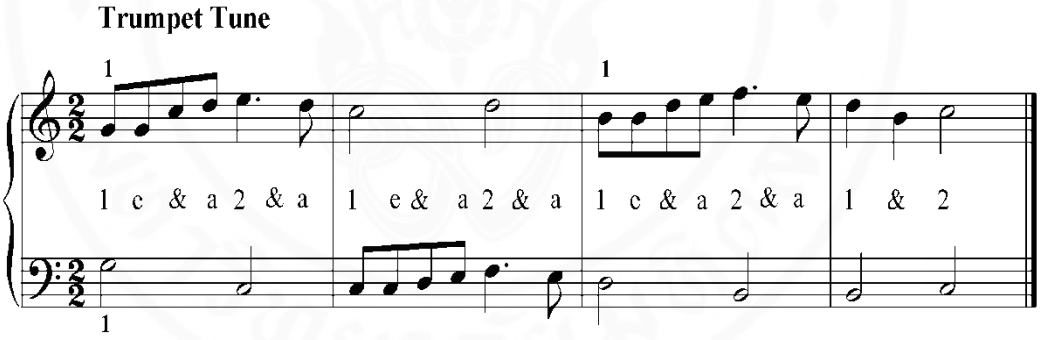

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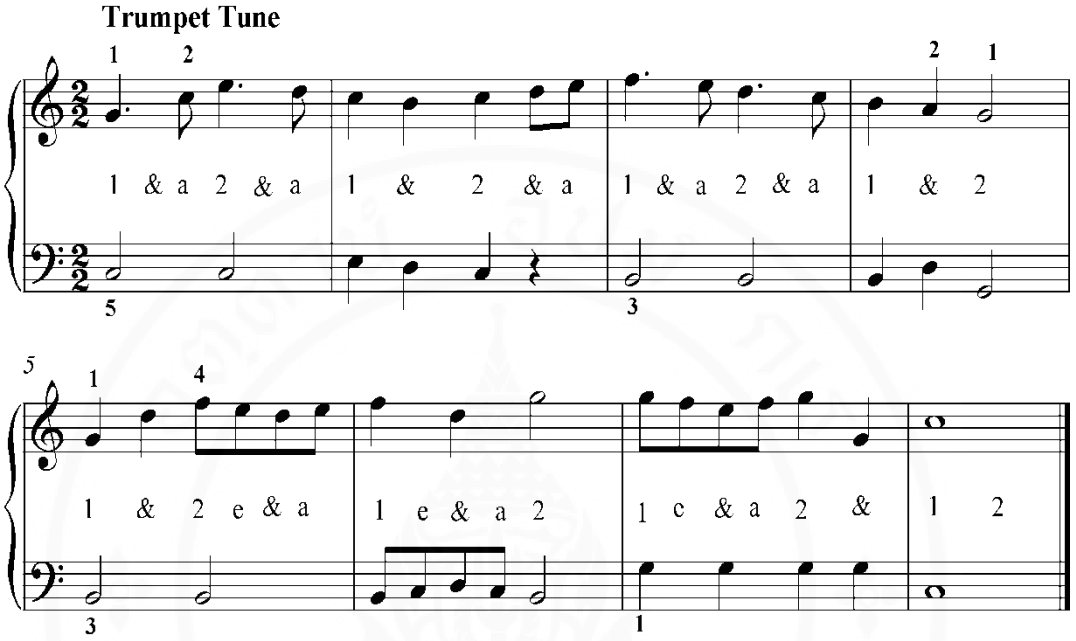
No. 6



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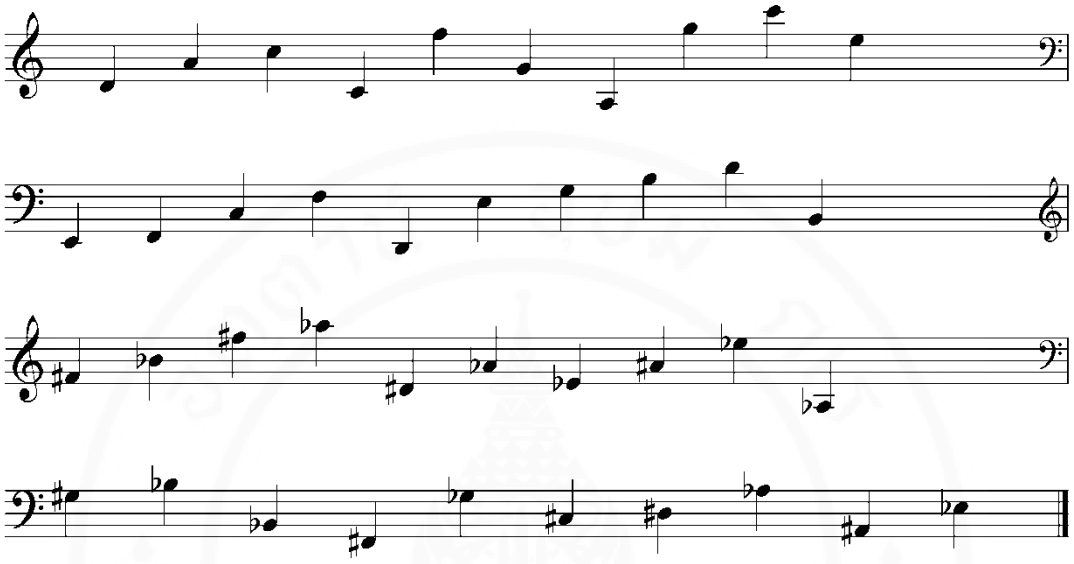
Review of pitch reading and pitch positioning



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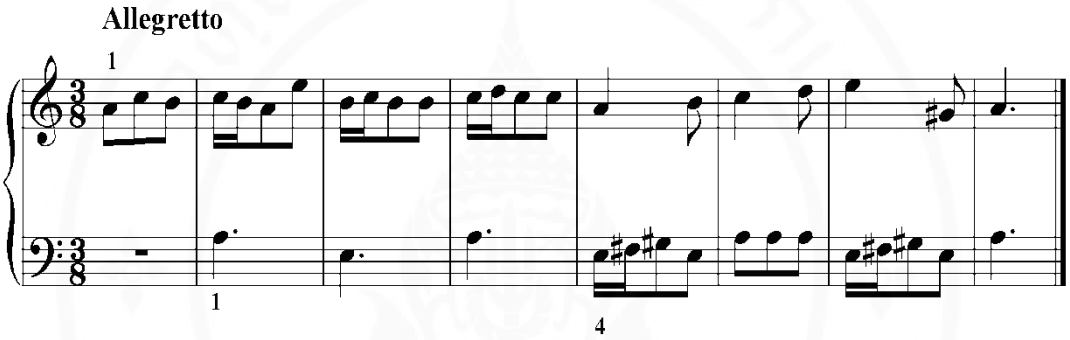
Chapter 2

Episode 2.1

Pre/Post-exercise 2.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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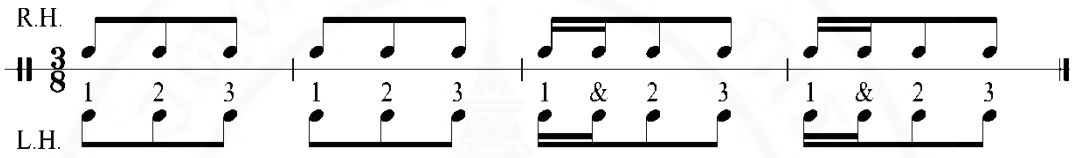
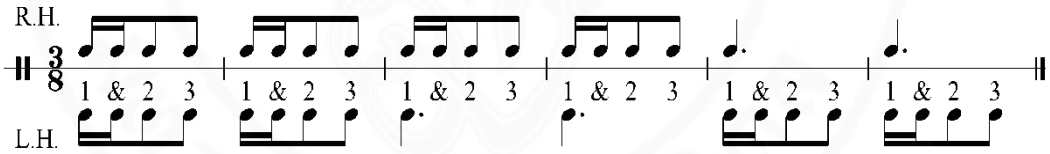
1. Tapping exercises

See the pink card

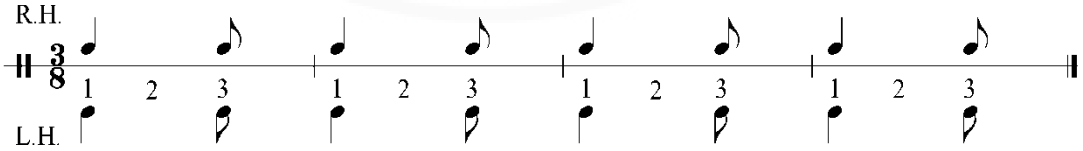
No. 1



No. 2



No. 3



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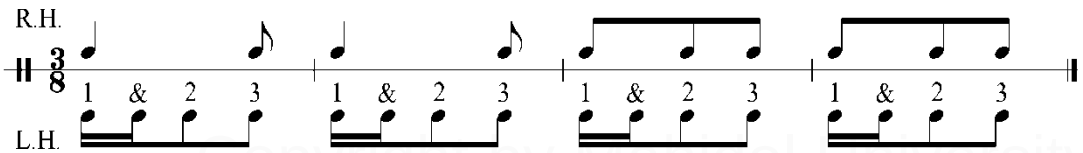

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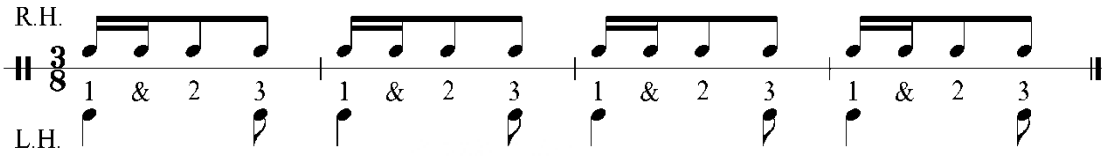
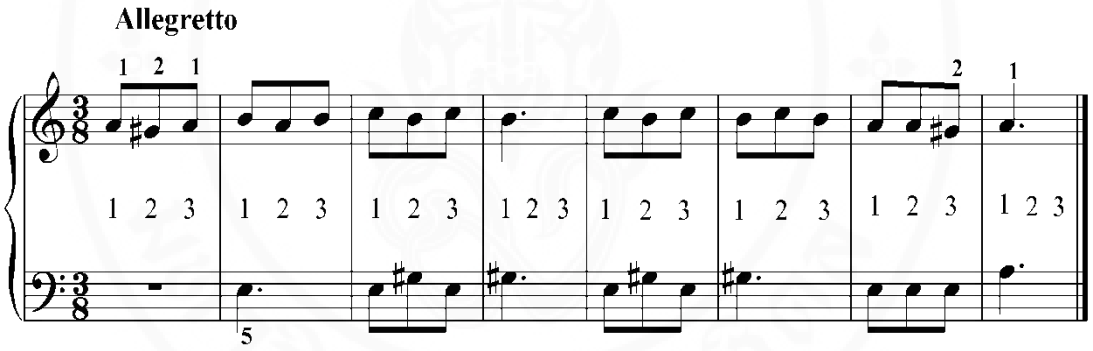
No. 5



2. Exercises

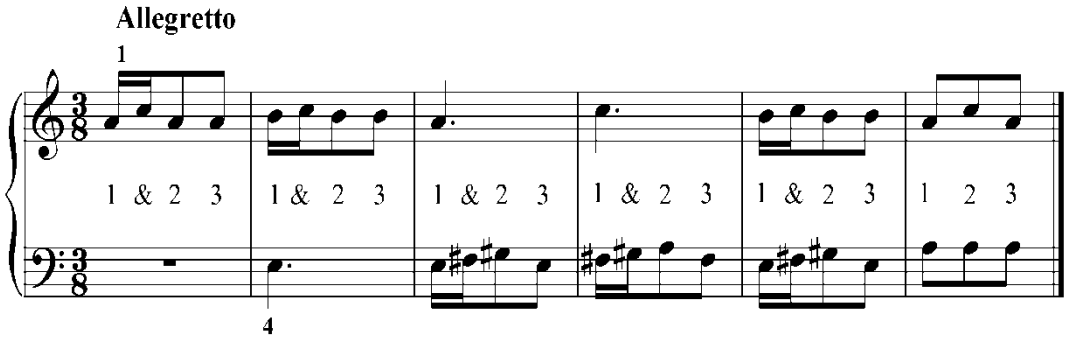
See the blue card

No. 1



Allegretto means moderately quick.

No. 2



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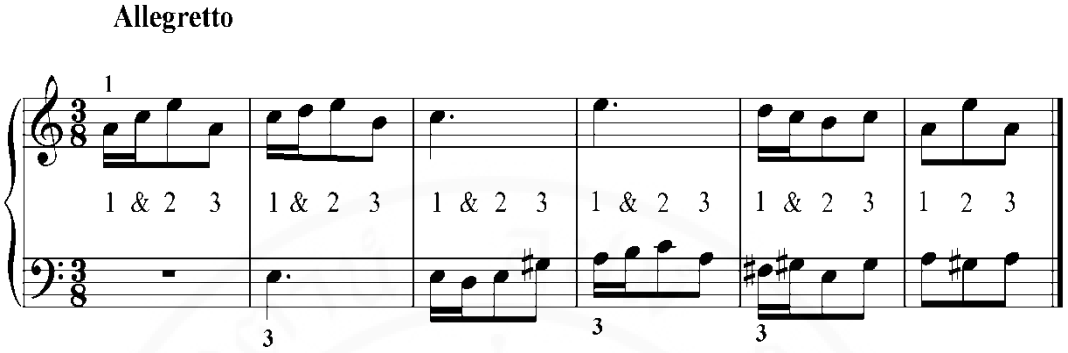

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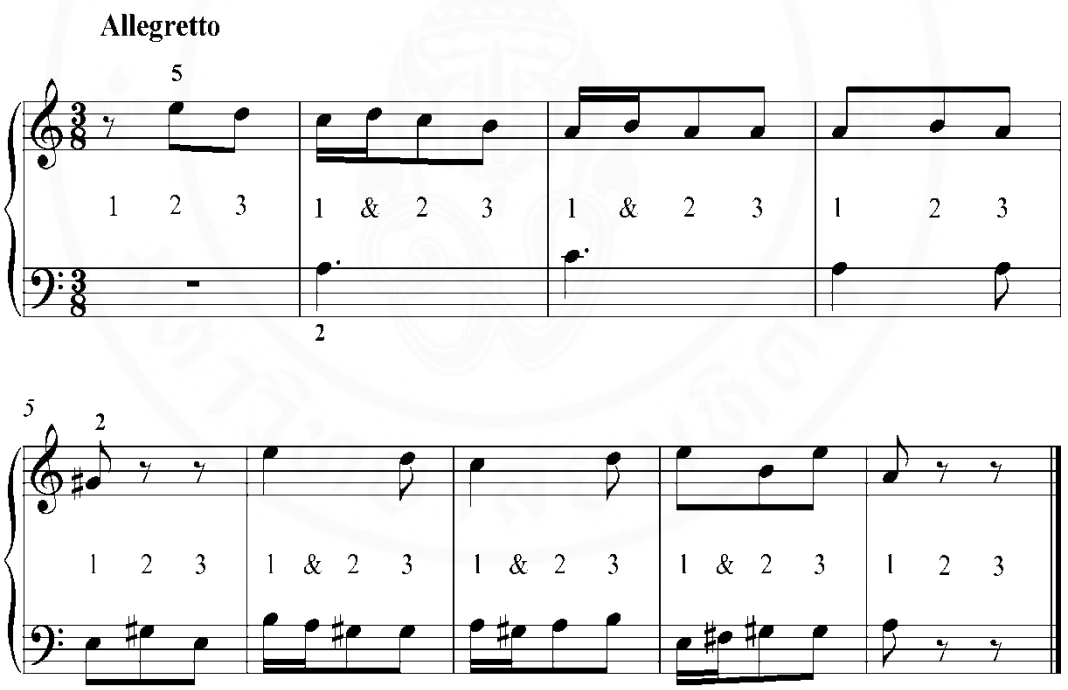

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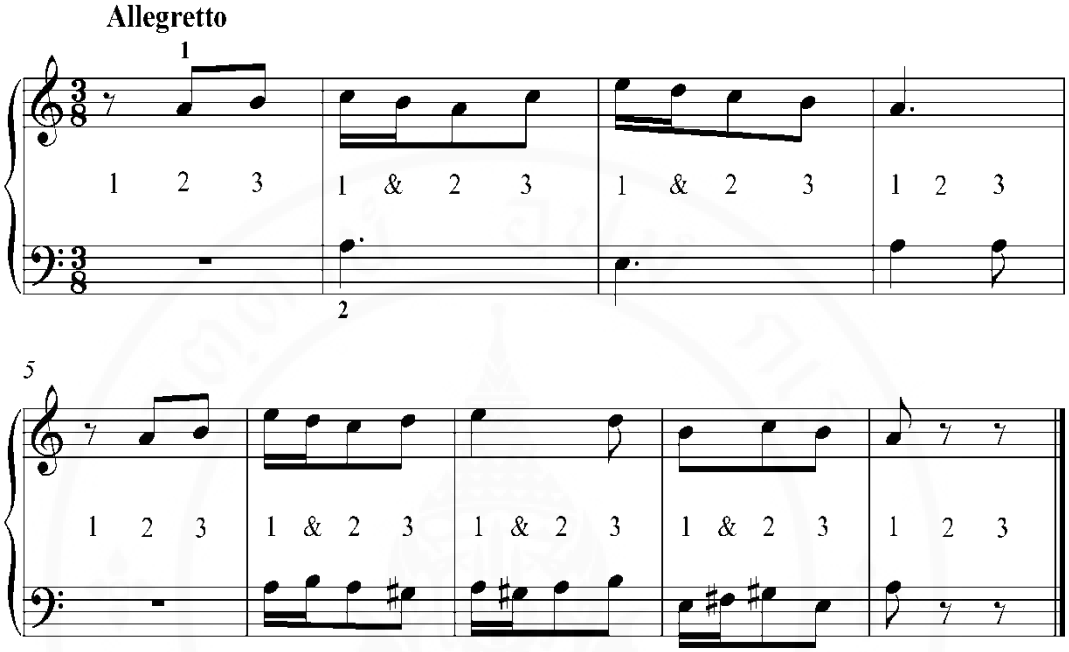

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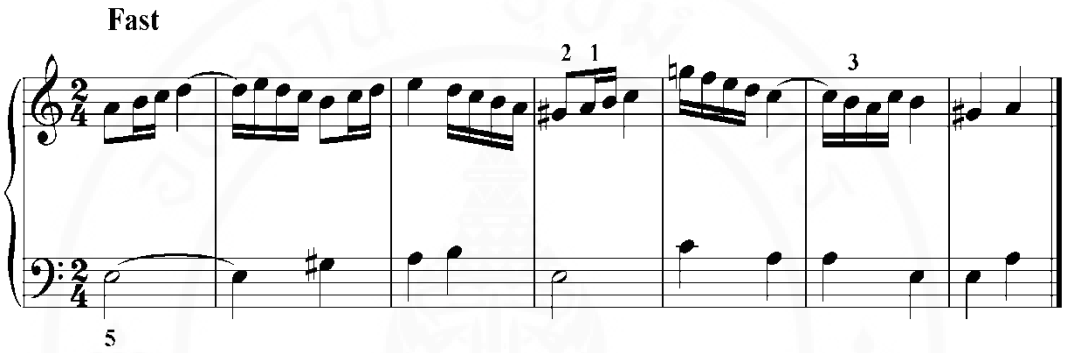
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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1. Tapping exercises

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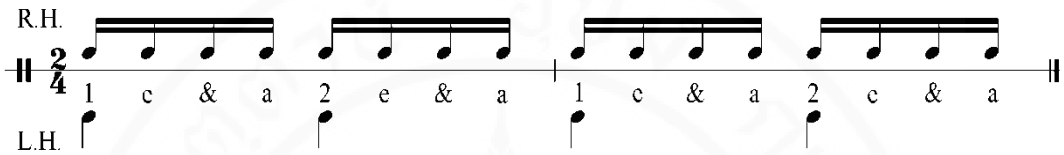
No. 1



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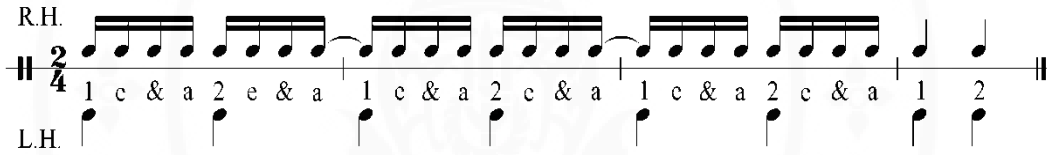

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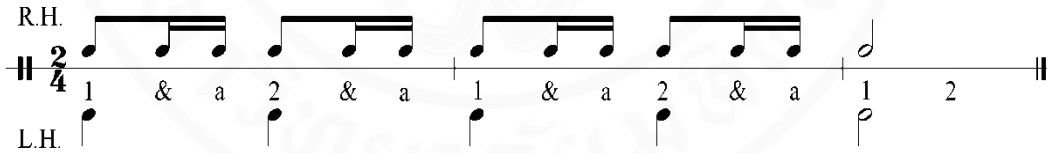

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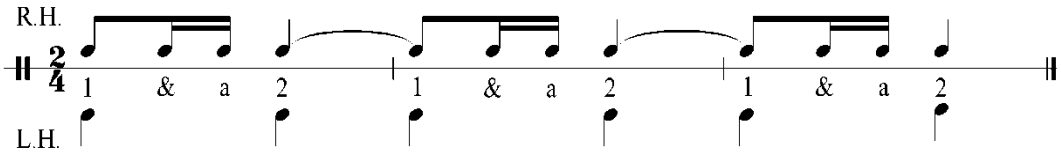

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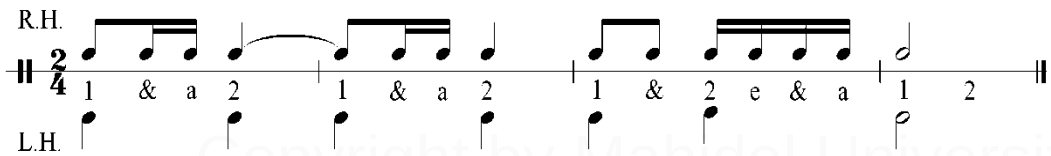

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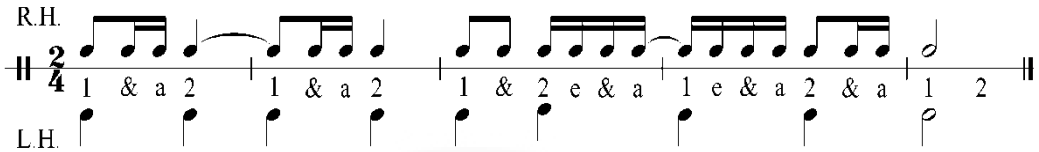

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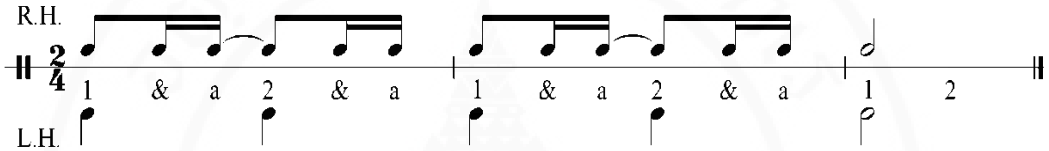

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2. Exercises

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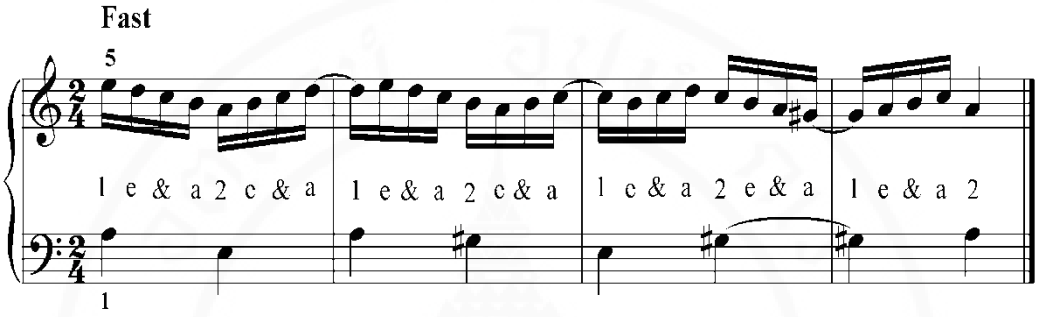
No. 1



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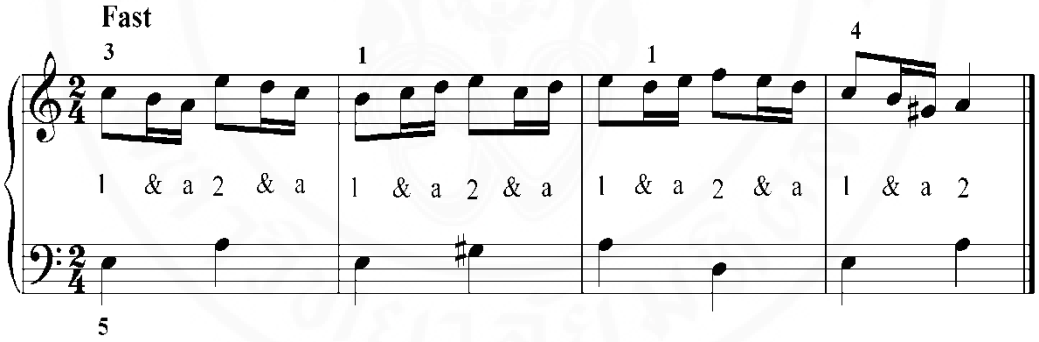

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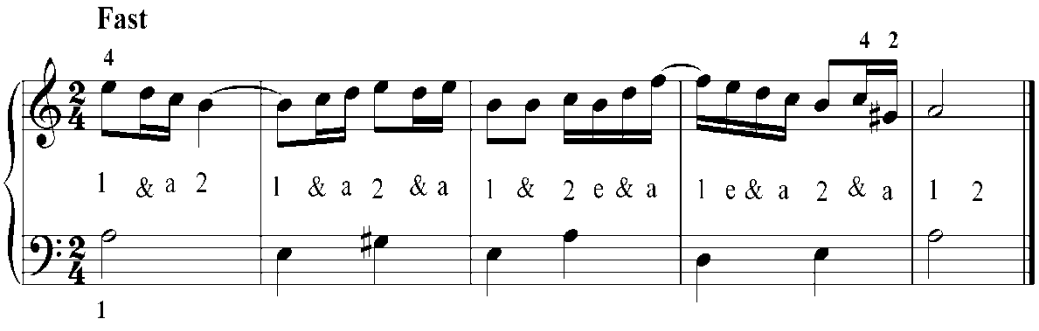

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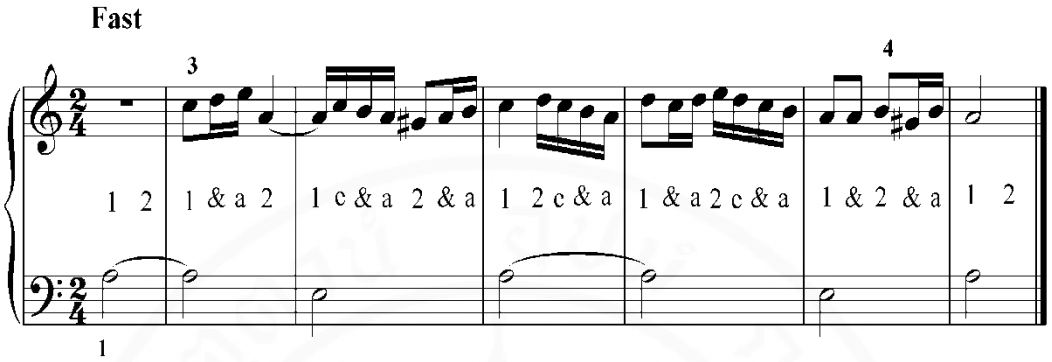

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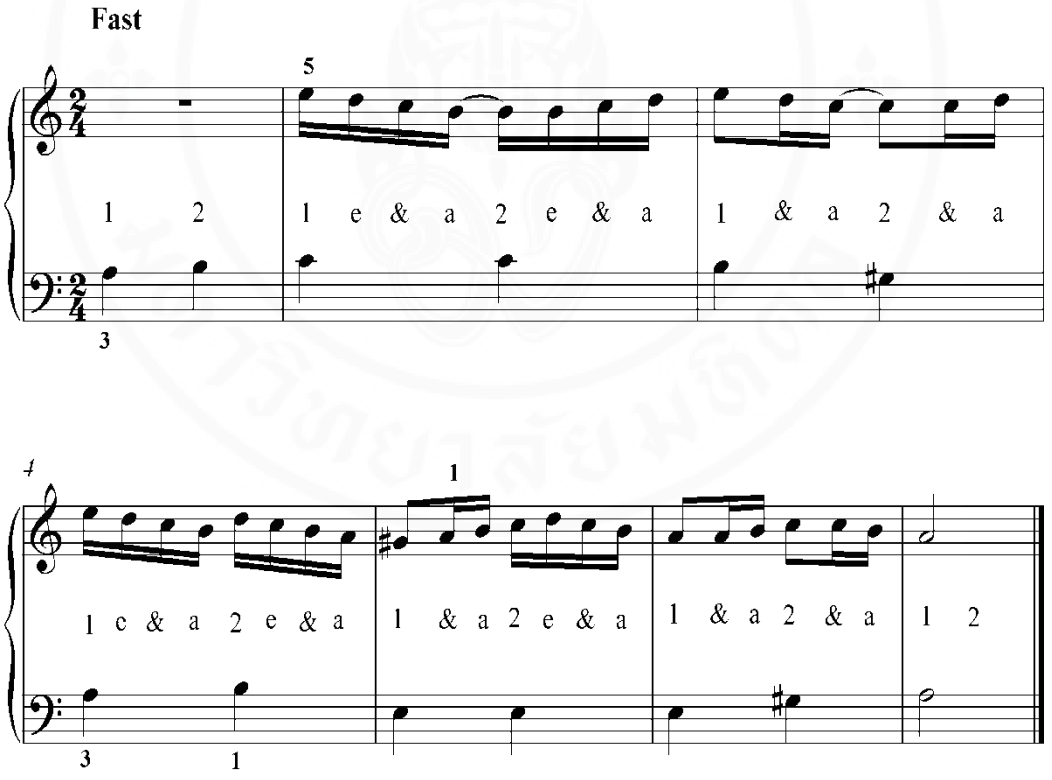

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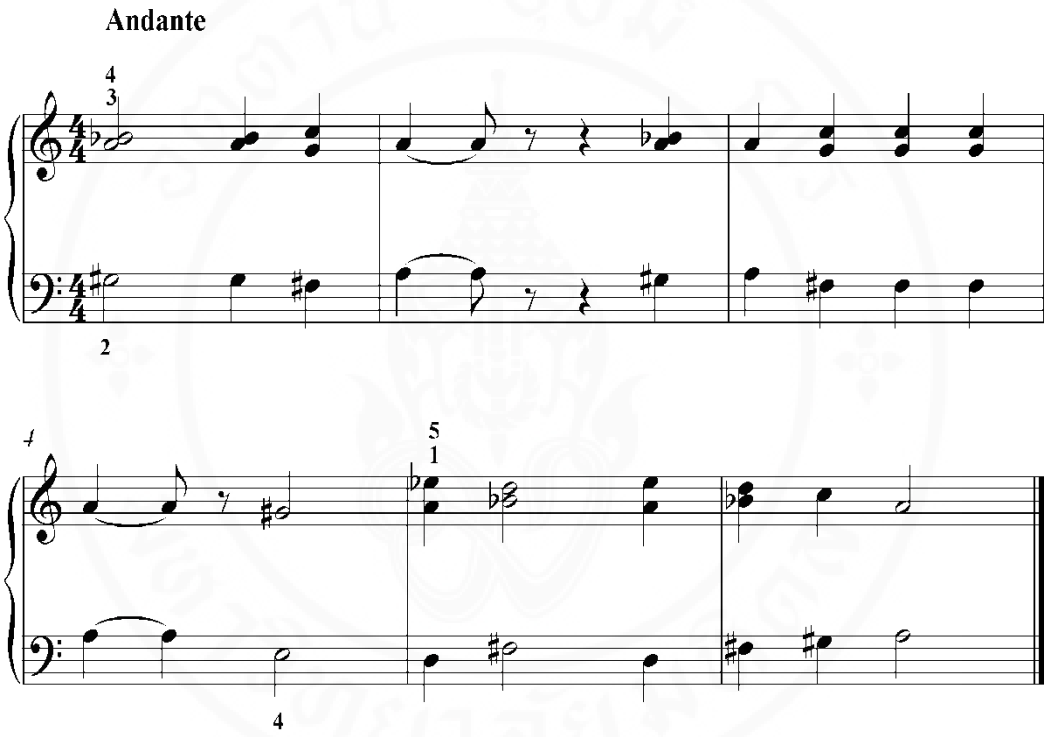
Episode 2.3

Pre/Post-exercise 2.3

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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Tapping exercises

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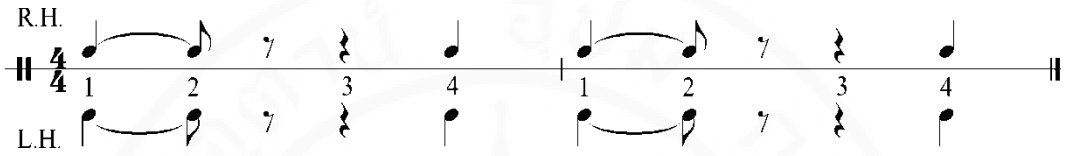
No. 1



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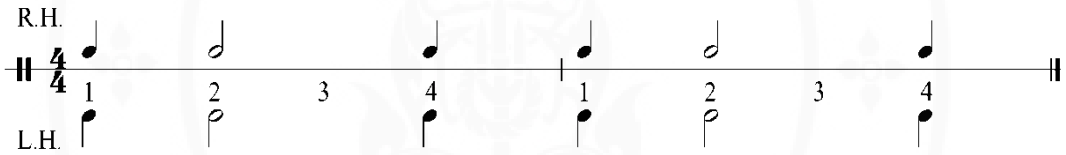

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2. Exercises

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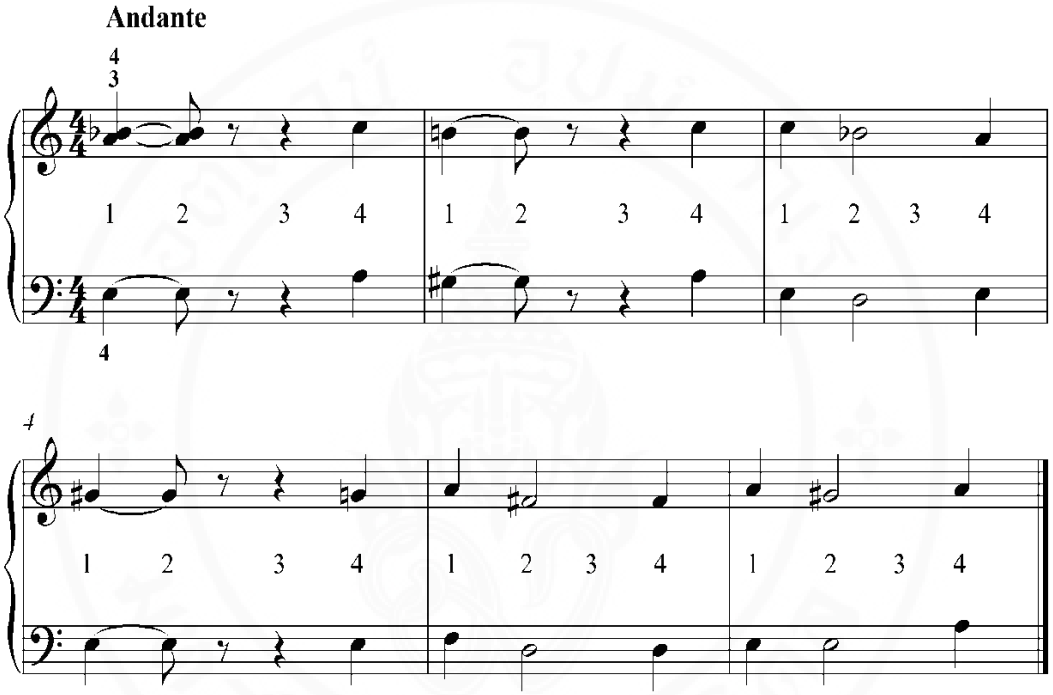
No. 1



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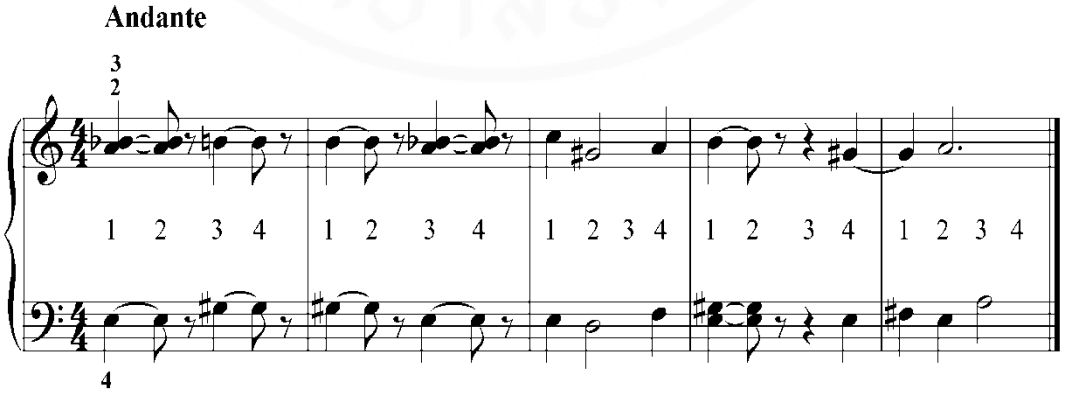

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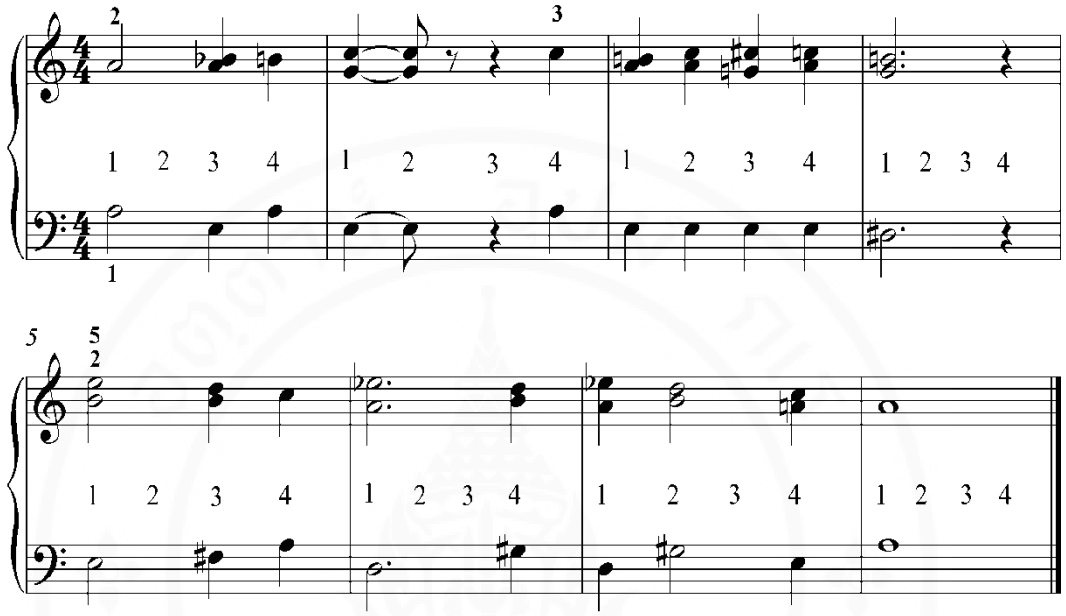
No. 3

Andante



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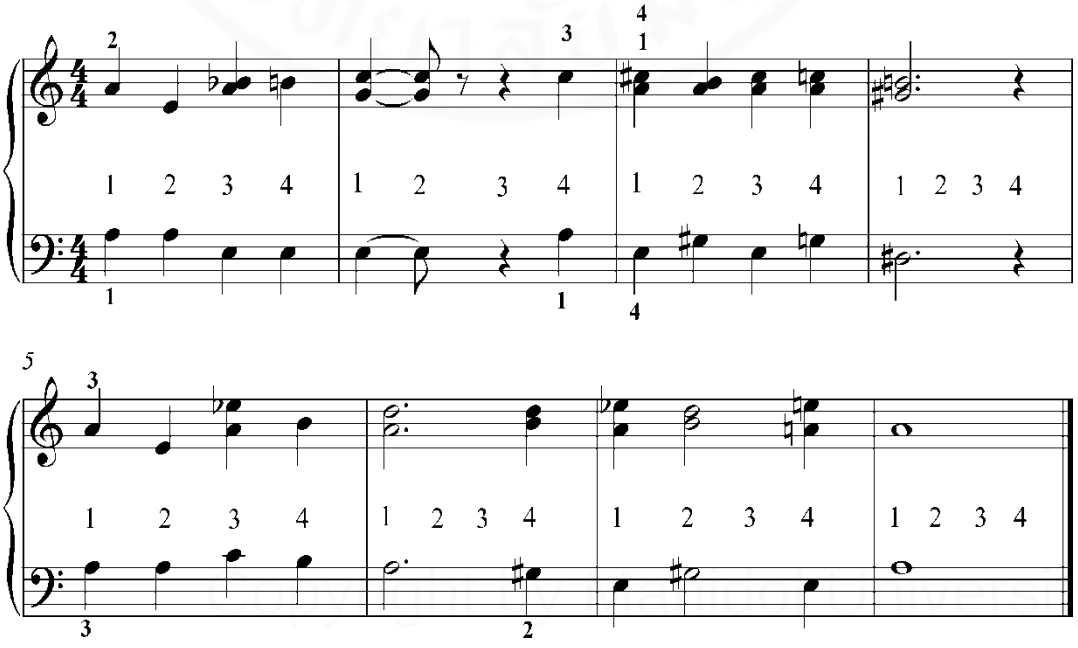
Andante

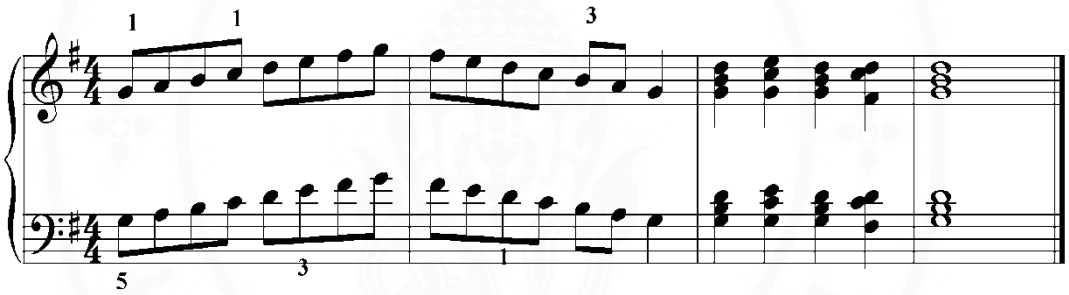


BOOK 3

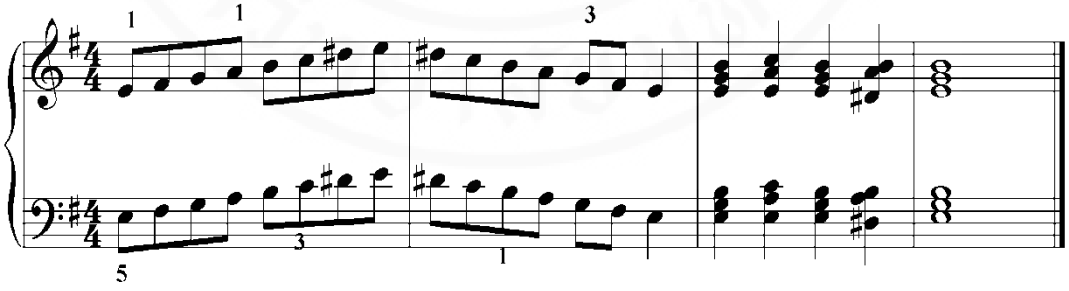
UNIT 2

Unit 2: Review of G major and E minor

Key signature with one sharp
G major



E harmonic minor



The secret of key specification…
When you see the piece **with** one sharp in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of G major and E minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

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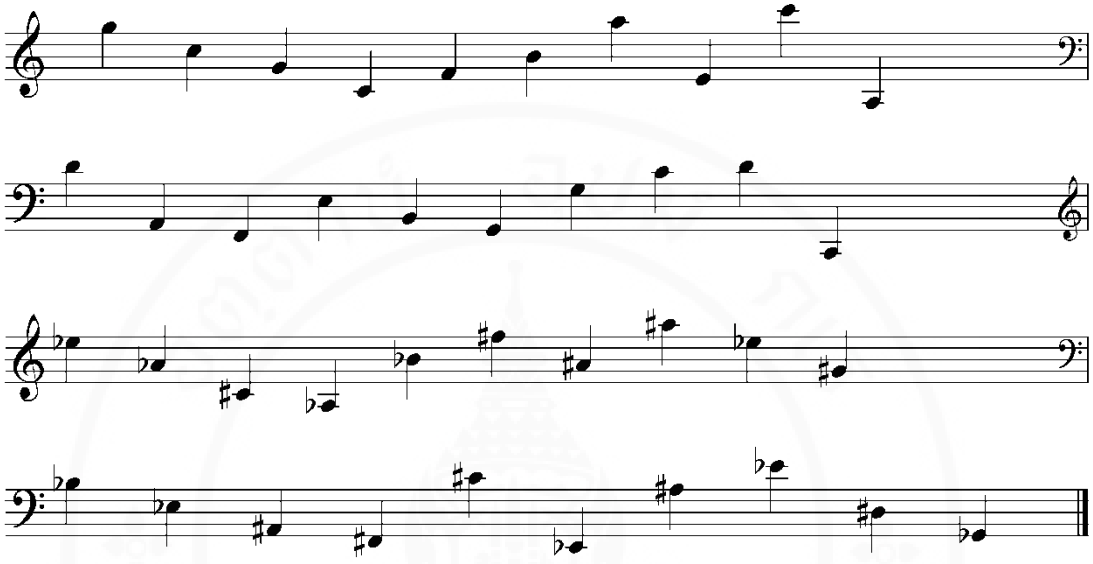
Review of pitch reading and pitch positioning



** More exercises, see the supplementary book.

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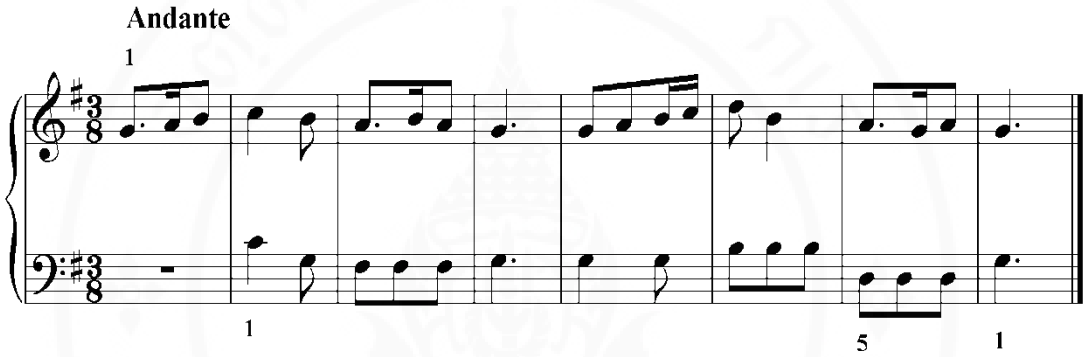
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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1. Tapping exercises

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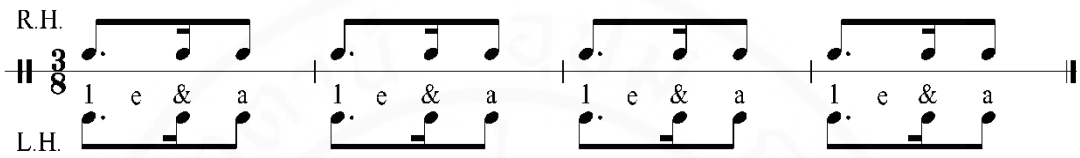
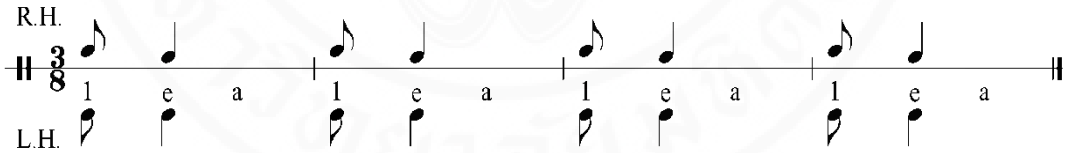
No. 1

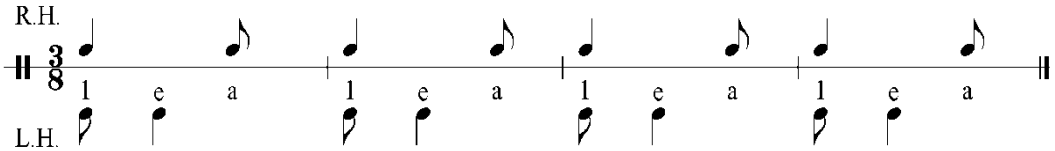


In chapter 1, 3/8 was indicated to be the simple time, which is different from every compound time signature e.g. 6/8, 9/8, and 12/8. As the means to count the rhythm in 3/8, you can count in 1, 2, 3. However, 3/8 is usually felt to the dance music, with quite fast tempo. Some musicians always count 3/8 in 1. It means count only 1 beat in one bar.

No. 2



No. 3



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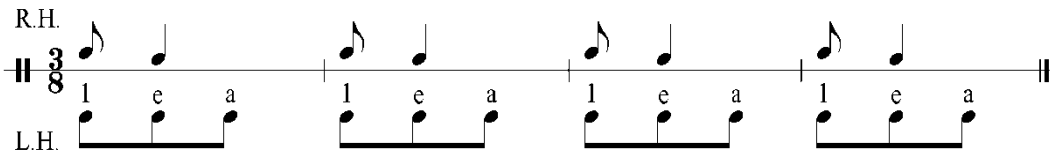

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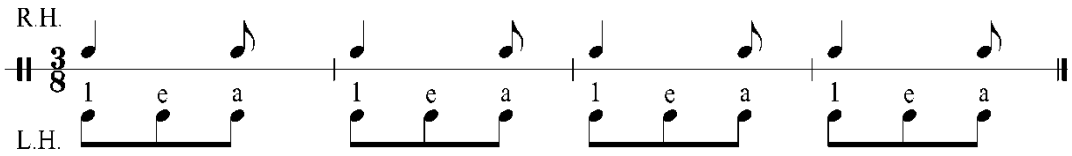

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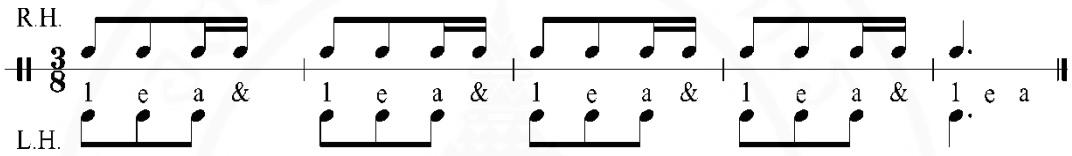

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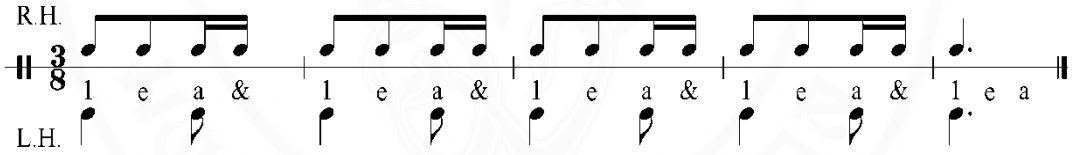

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. Exercises

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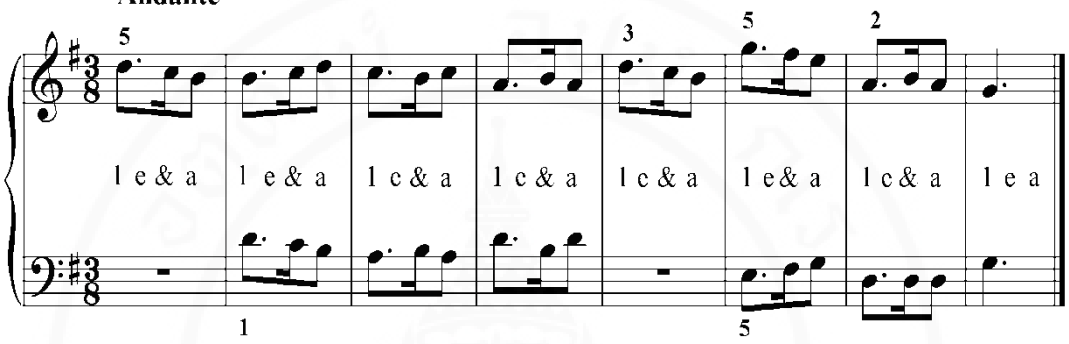
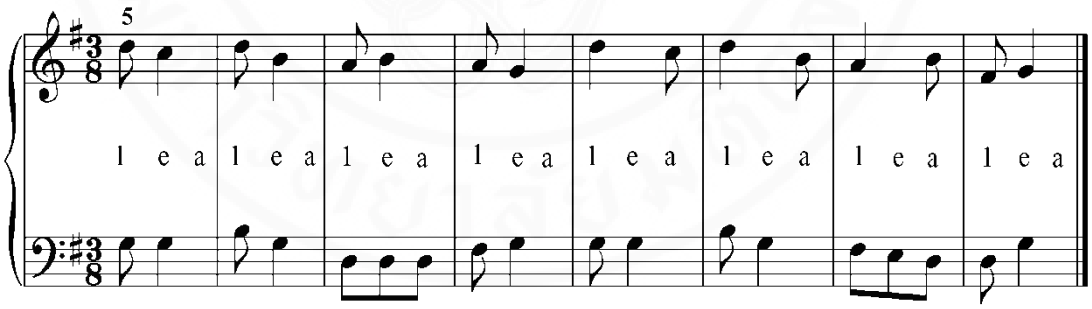
No. 1

Andante



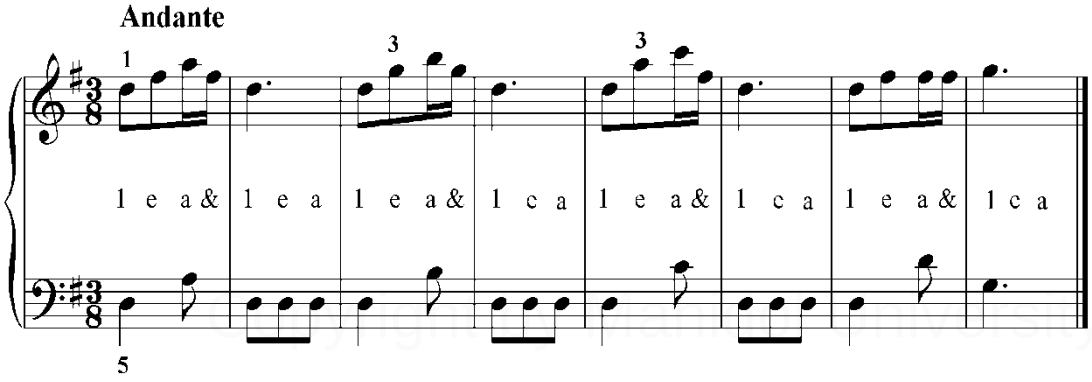
No. 2

Andante



No. 3

Andante



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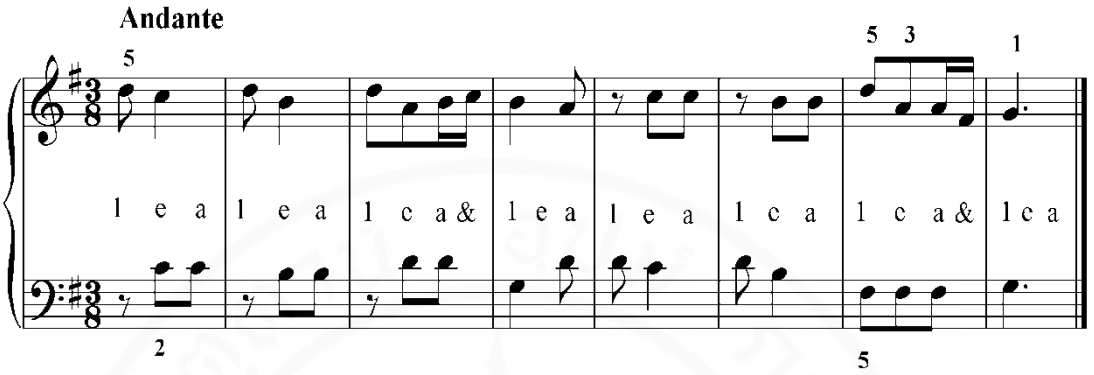

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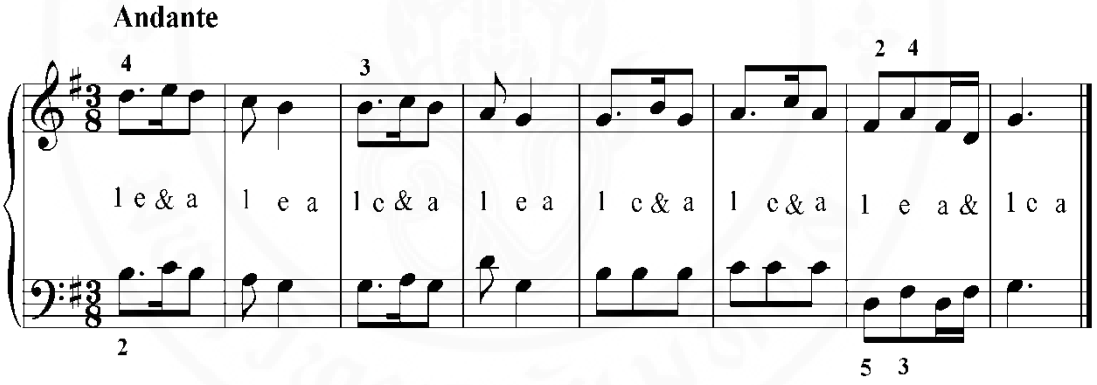

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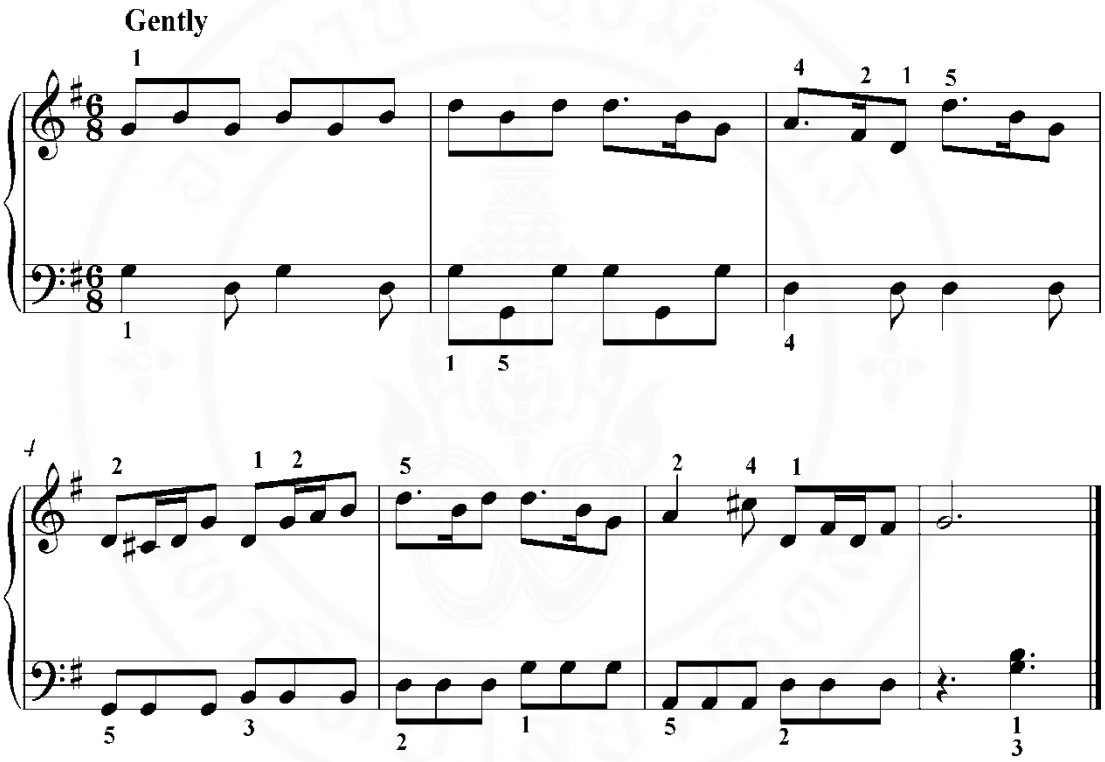
Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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1. Tapping exercises

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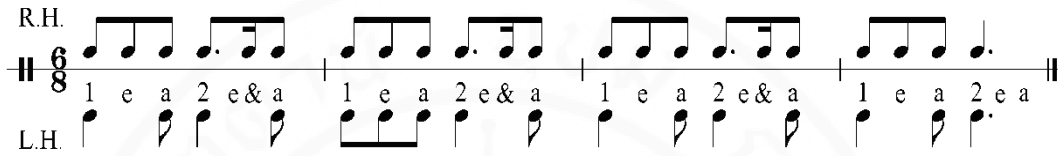
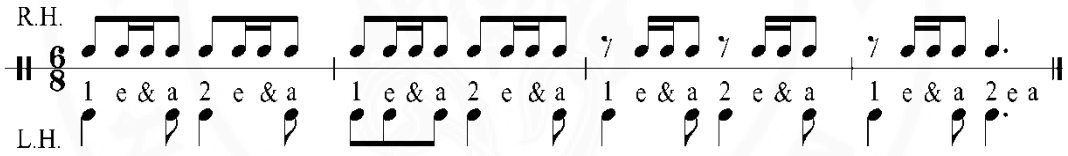
No. 1



In time signature 6/8, eighth note gets 1 beat, quarter note gets 2 beats, and sixteenth note gets 1/2 beat. Count 6/8 in two, similar to count 3/8 in one.

No. 2



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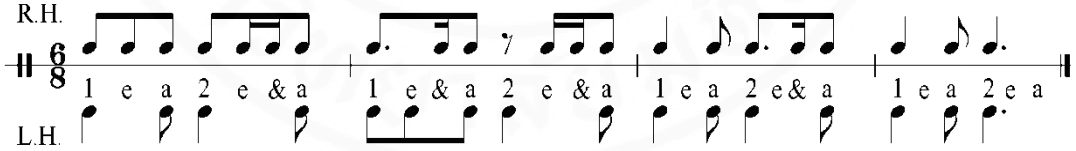

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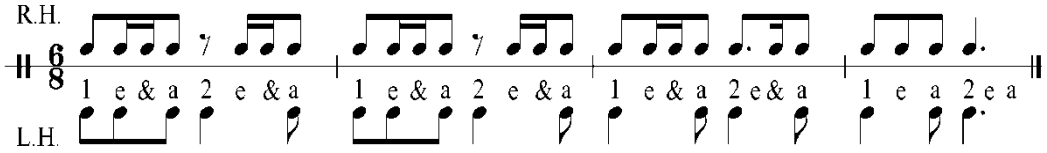

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2. Exercises

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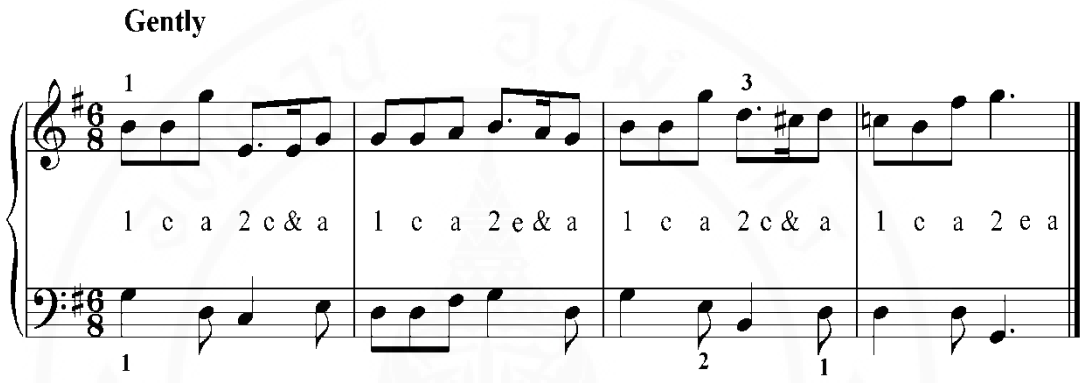
No. 1



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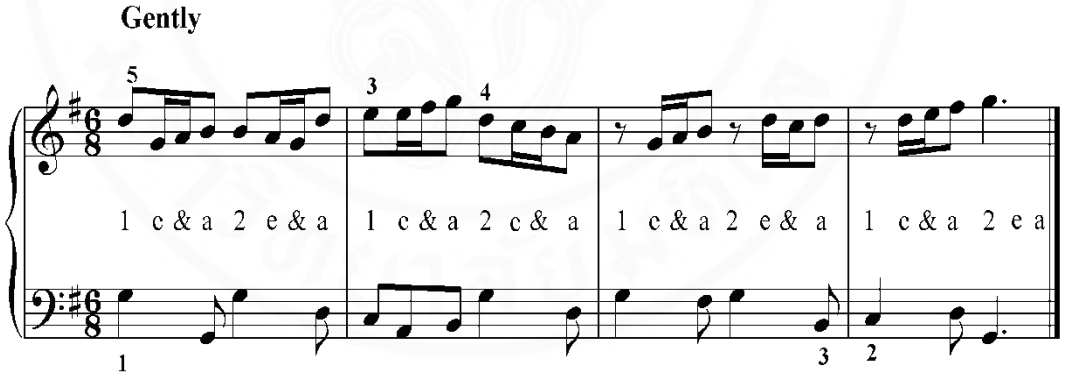

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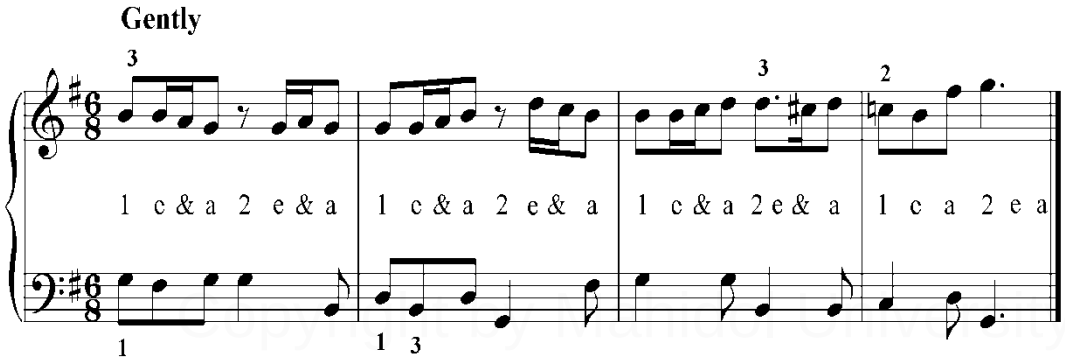

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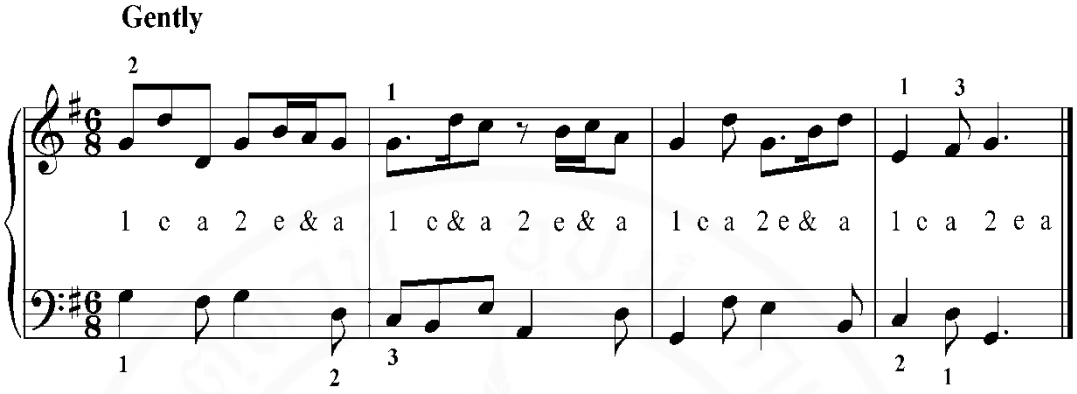

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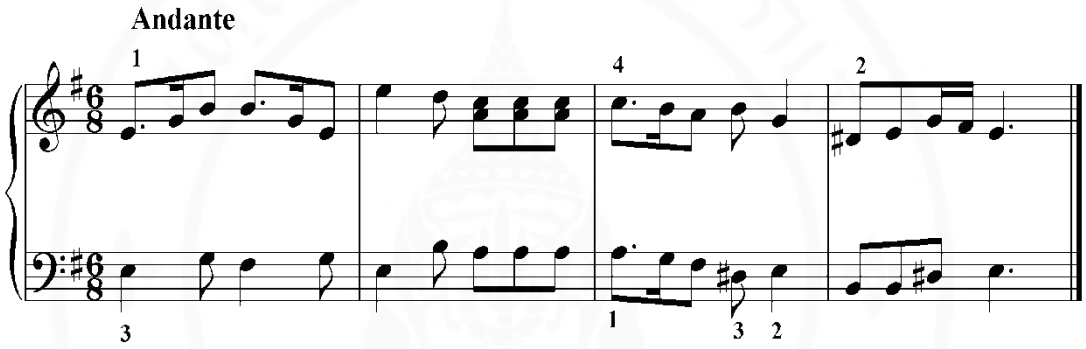
Chapter 2

Episode 2.1

Pre/Post-exercise 2.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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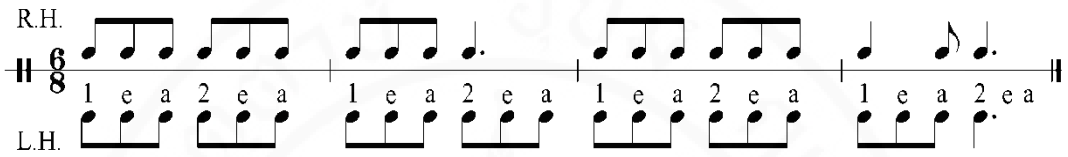
1. Tapping exercise

See the pink card

No. 1



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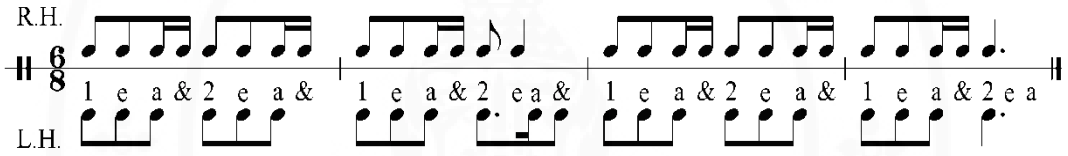

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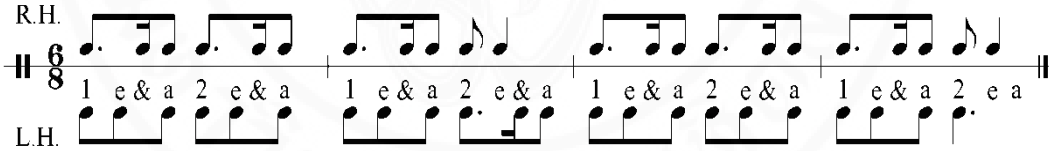

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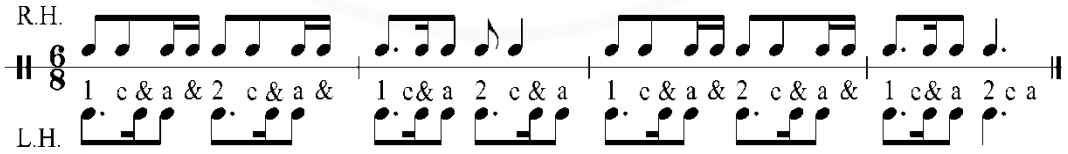

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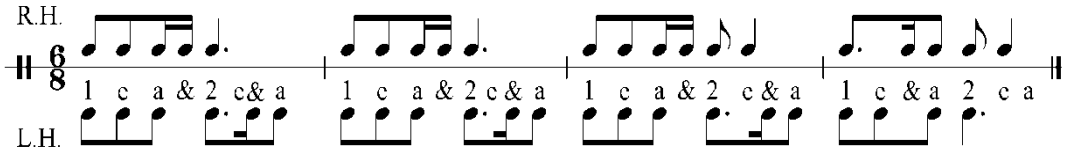

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2. Exercises

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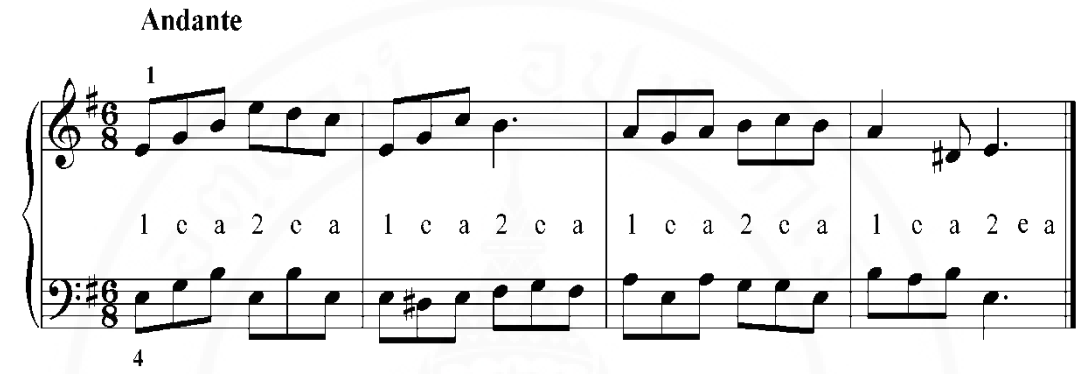
No. 1



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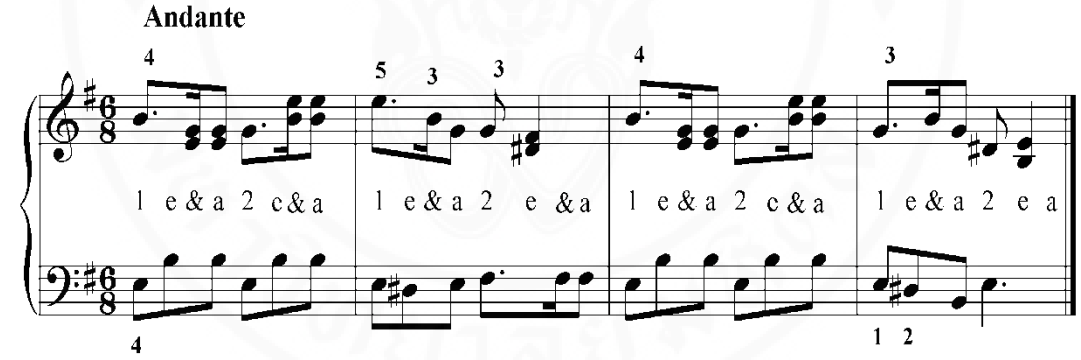

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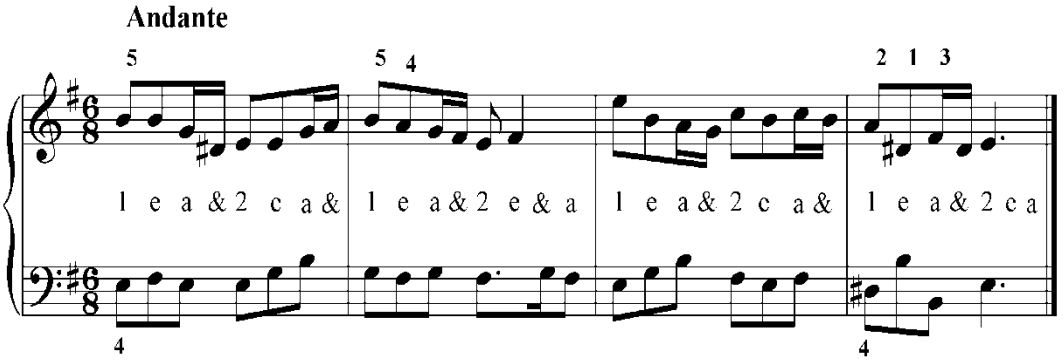

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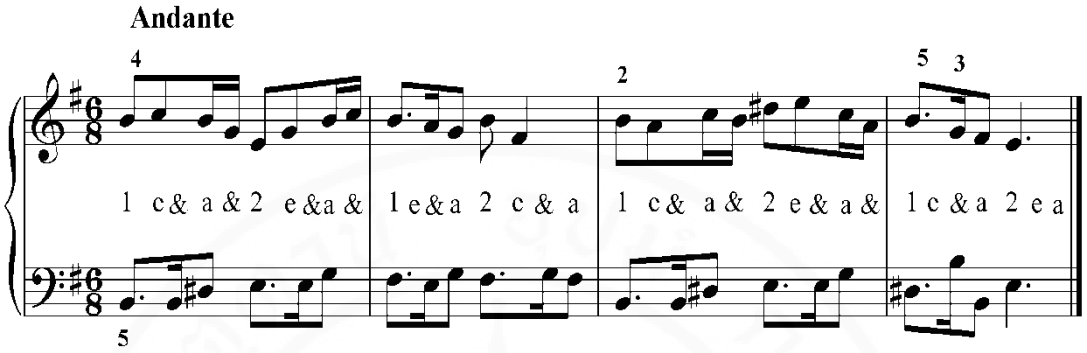

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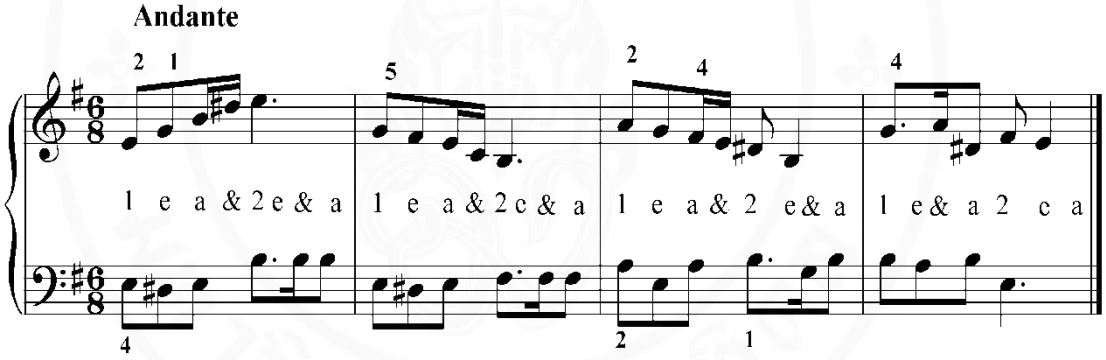

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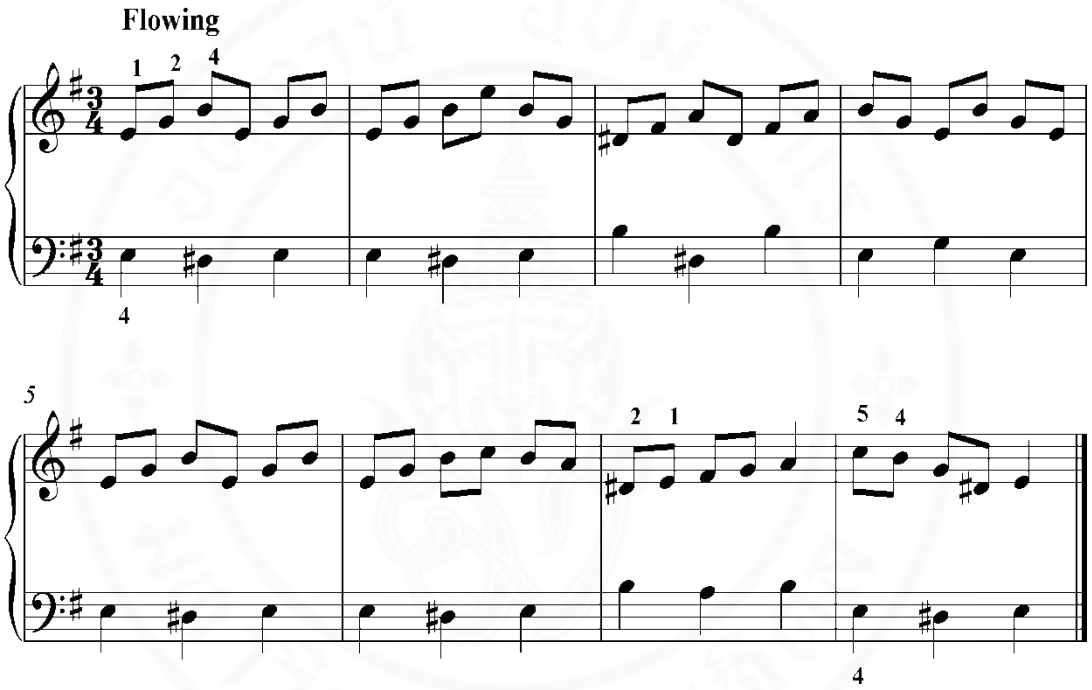
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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1. Tapping exercises

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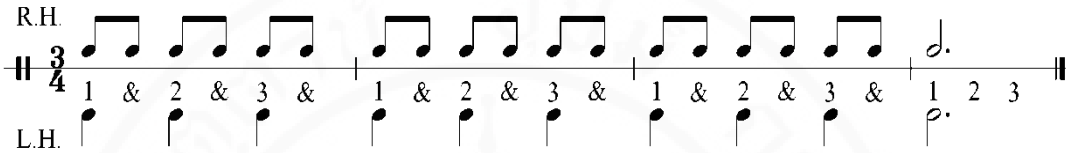
No. 1



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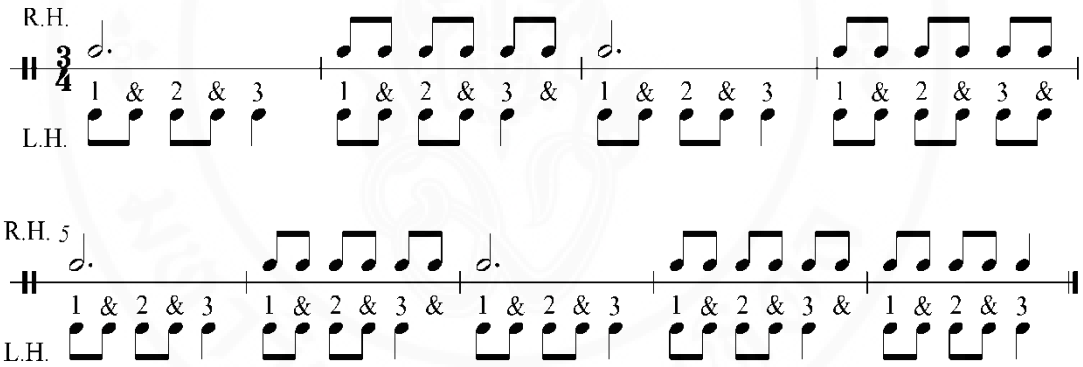

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2. Exercises

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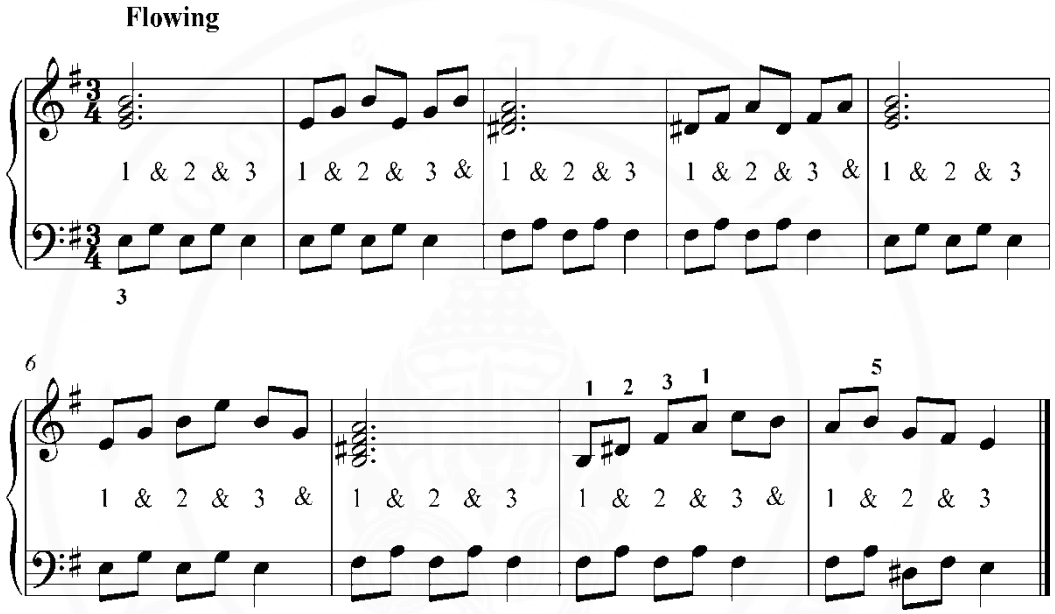
No. 1



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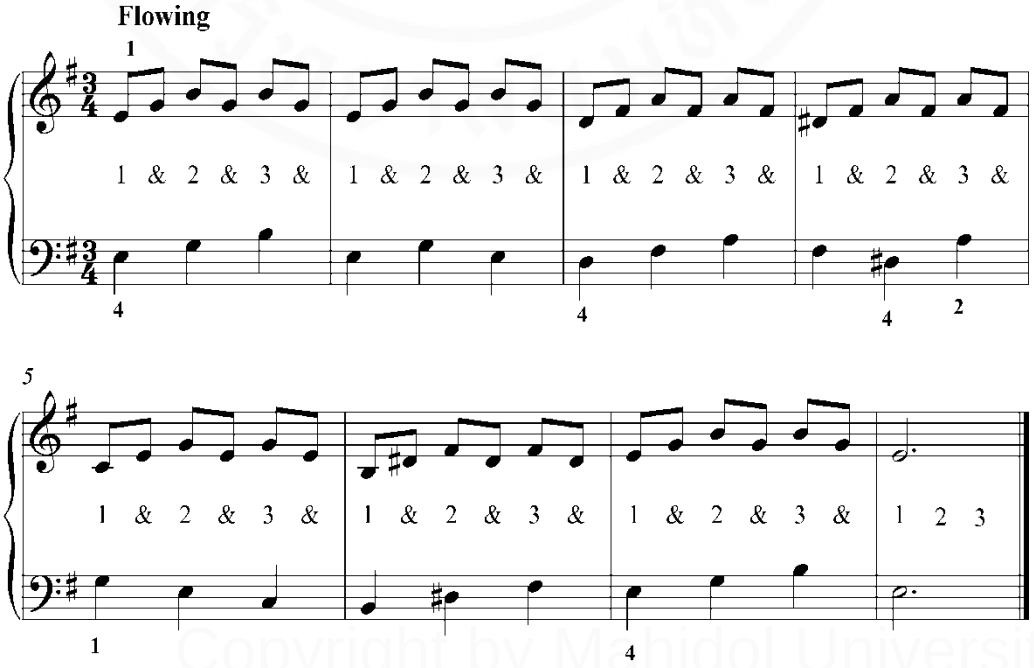

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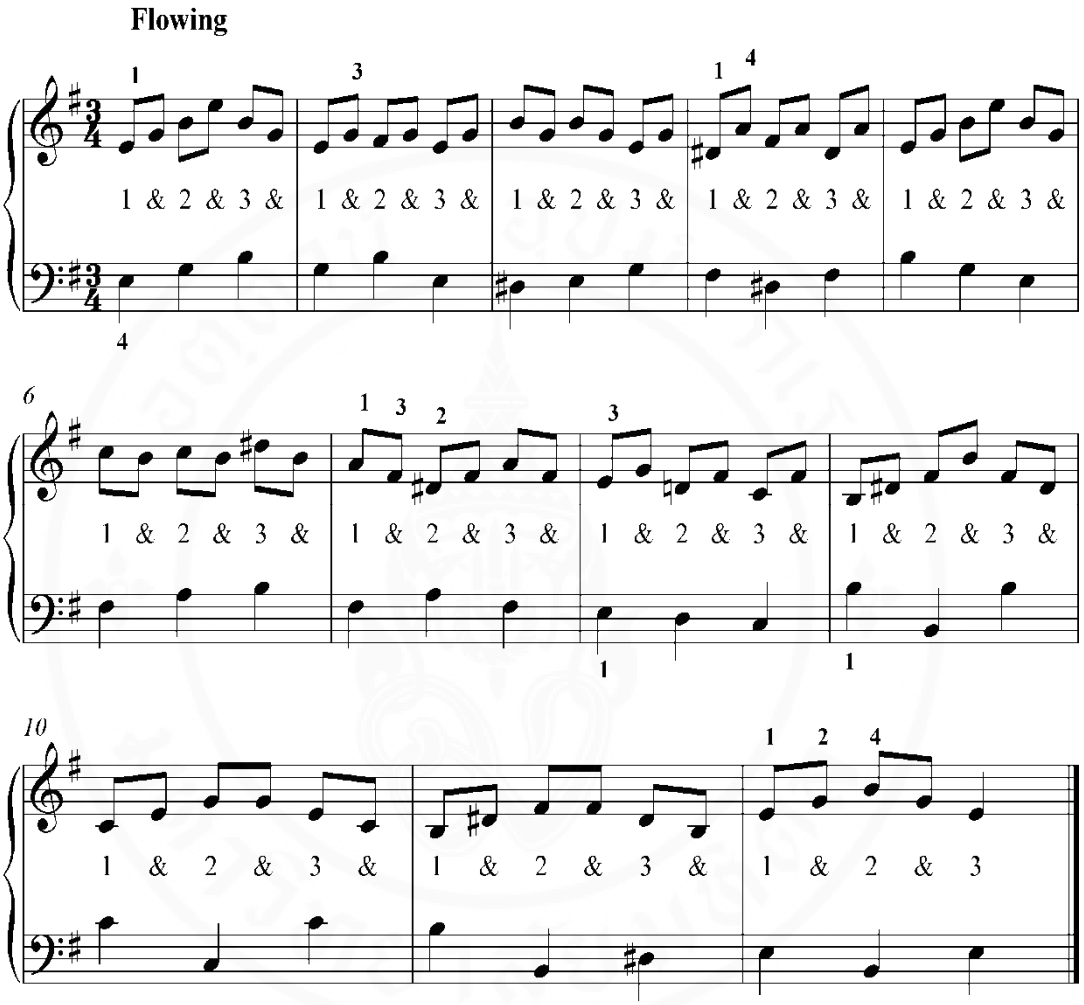
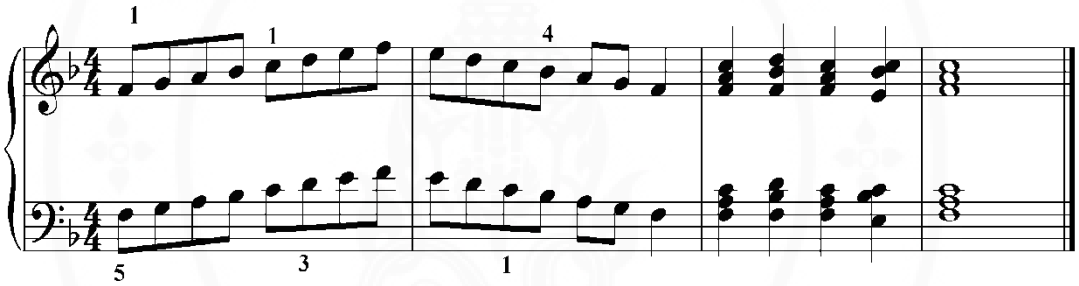


BOOK 4

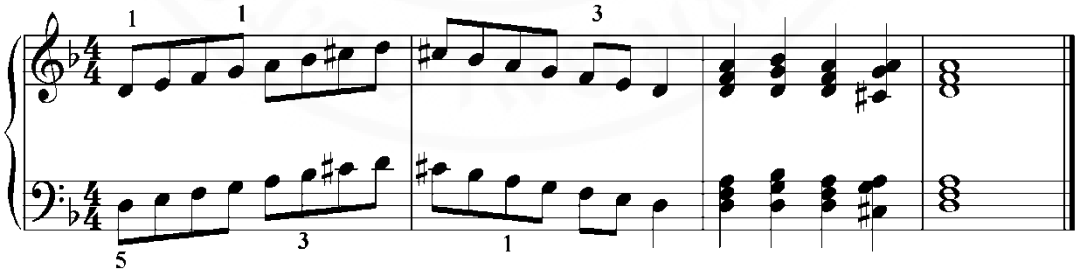
UNIT 3

Unit 3: Review of F major and D minor

Key signature with one flat sign
F major

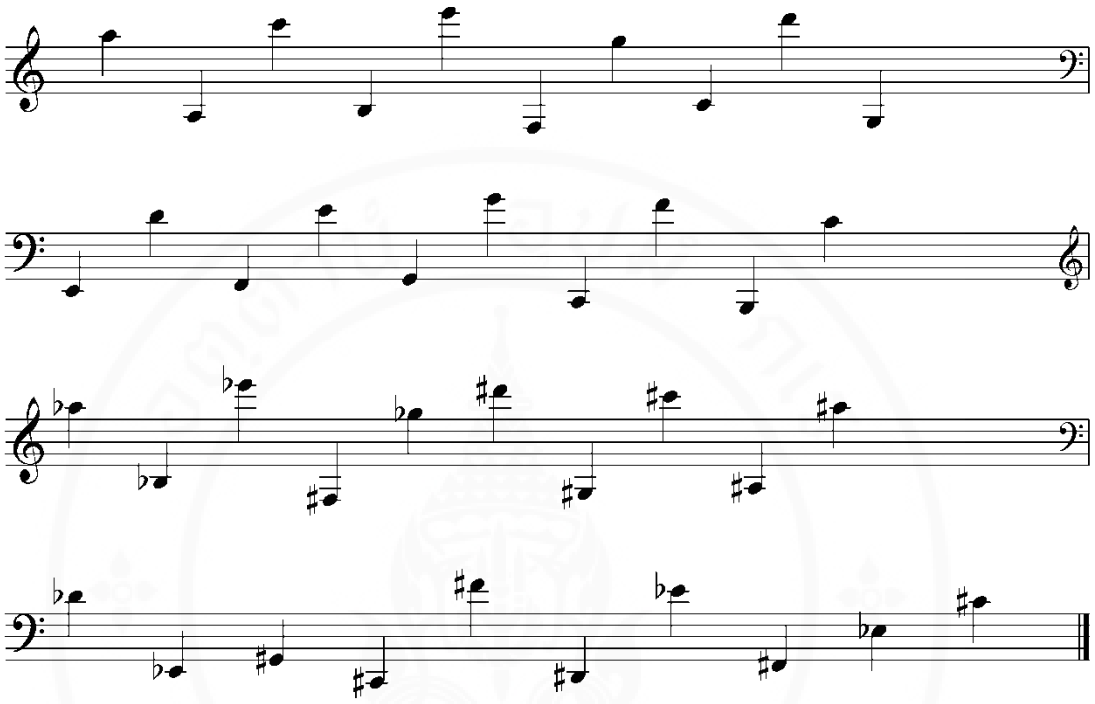


D harmonic minor



The secret of key specification…
When you see the piece **with** one flat in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of F major and D minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

Review of pitch reading and pitch positioning



** More exercises, see the supplementary book.

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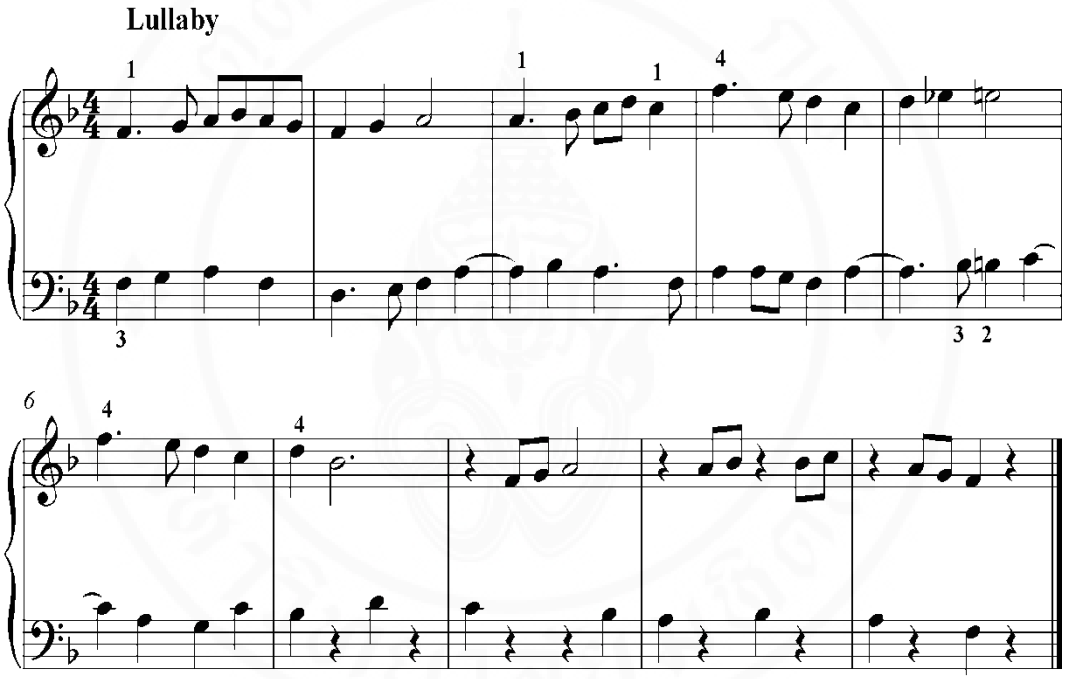
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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1. Tapping exercises

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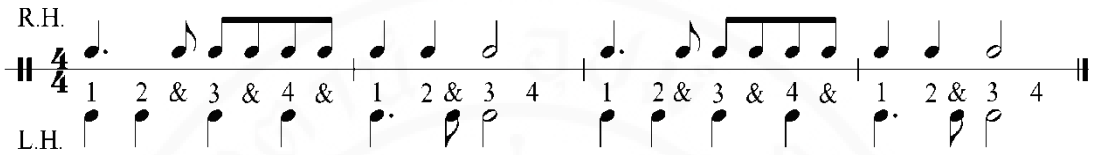
No. 1



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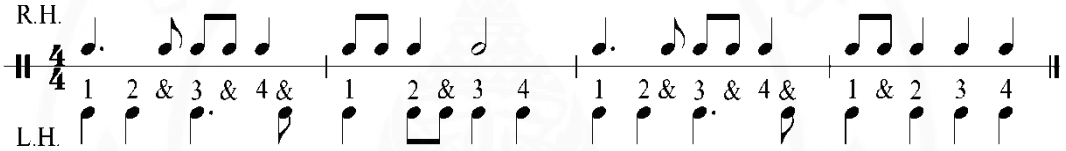

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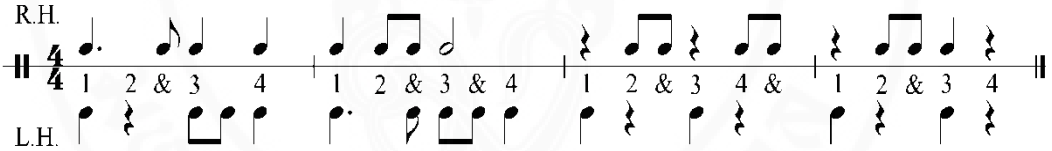

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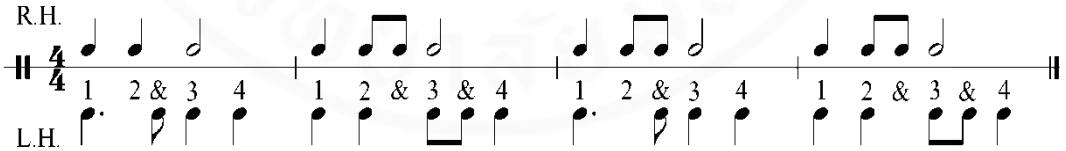

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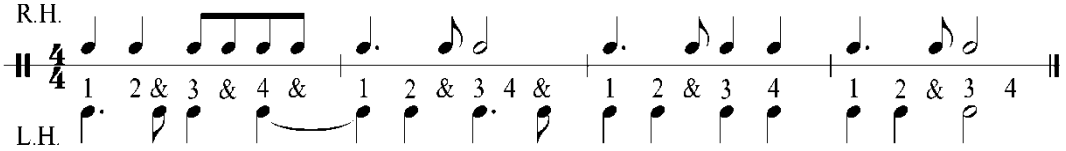

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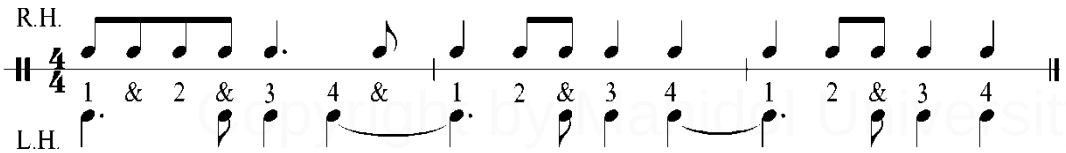

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2. Exercises

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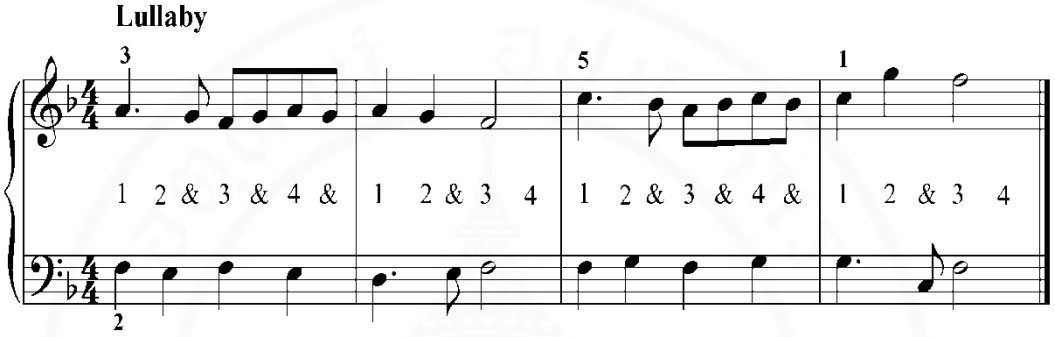
No. 1



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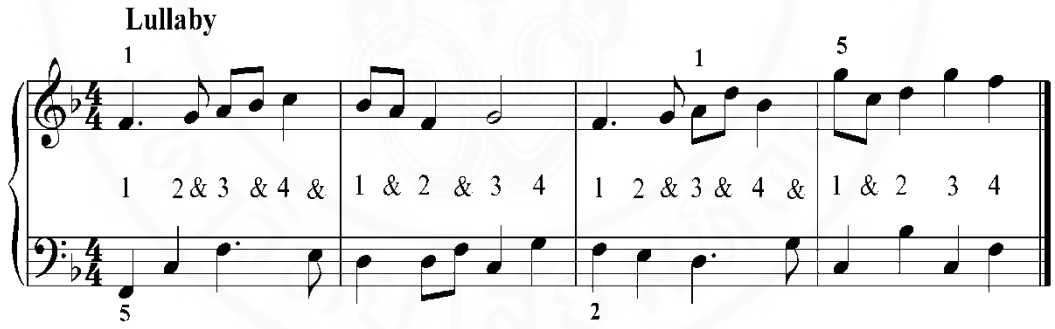

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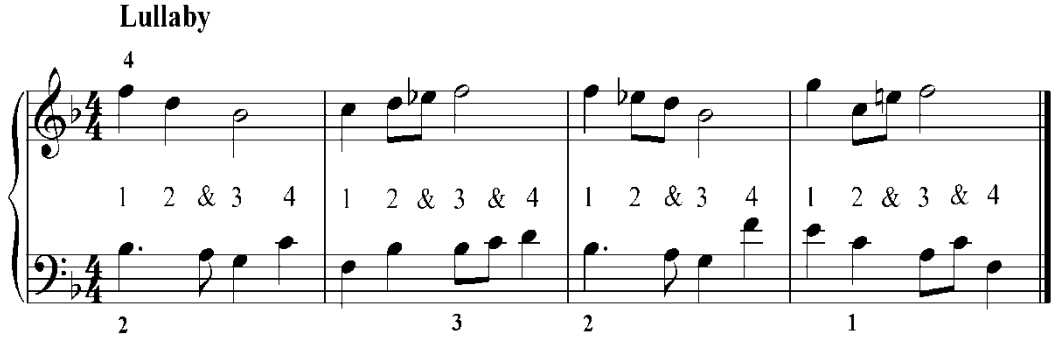

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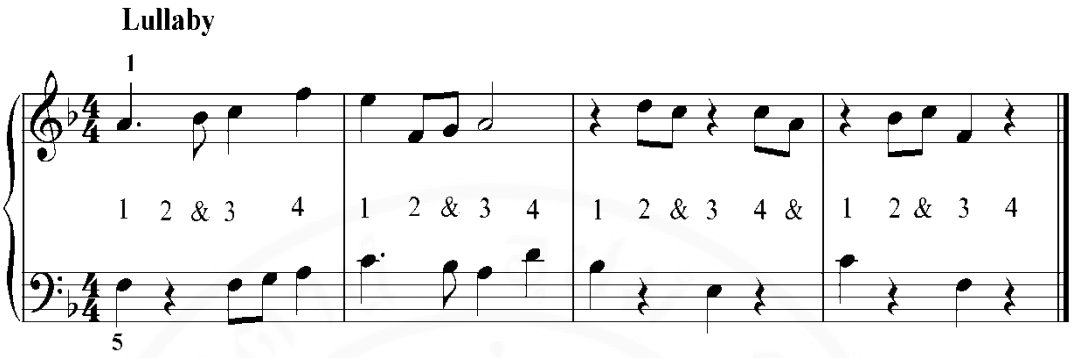
No. 4



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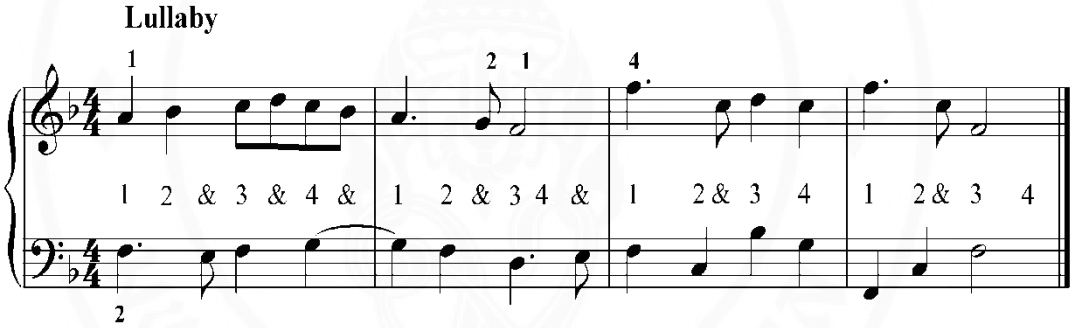

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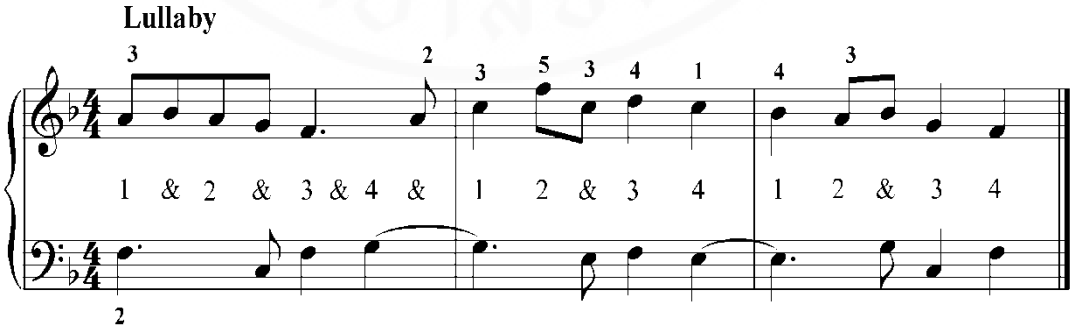

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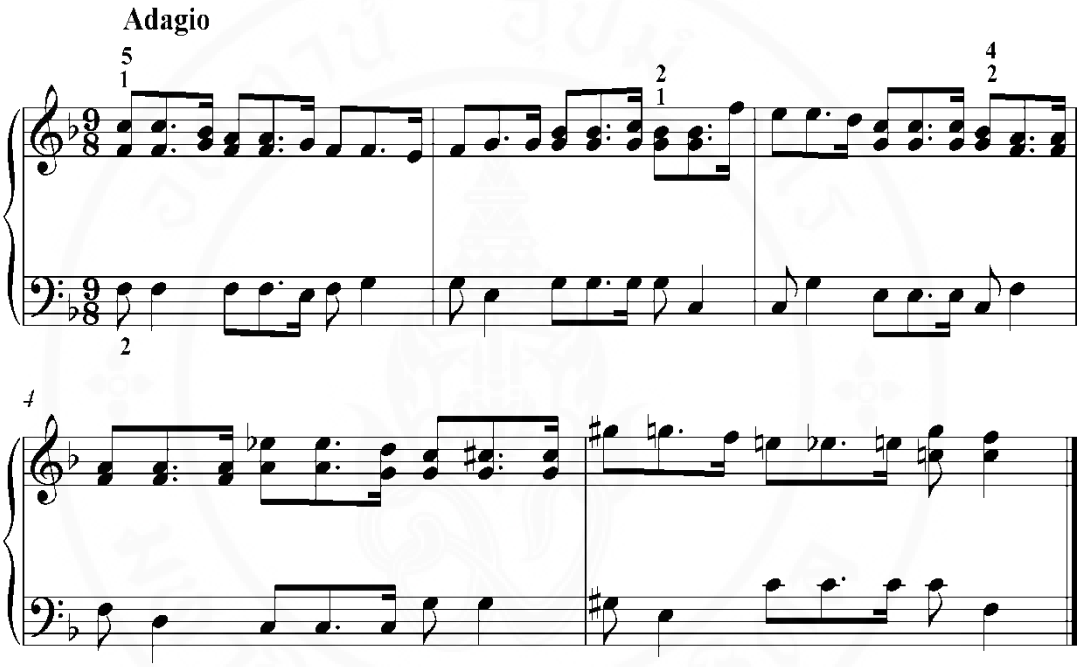
Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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1. Tapping exercises

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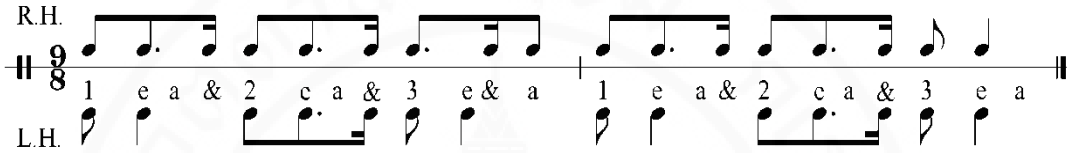
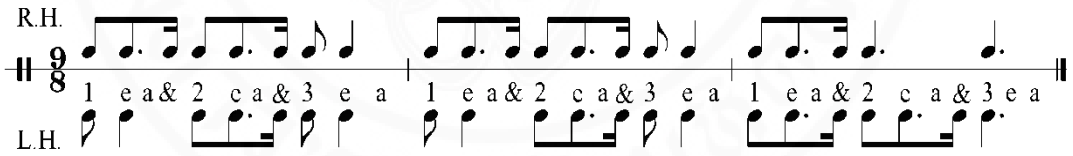
No. 1



In time signature 9/8, eighth note gets 1 beat, quarter note gets 2 beats, and sixteenth note gets 1/2 beat. Count 9/8 in three.

No. 2



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2. Exercises

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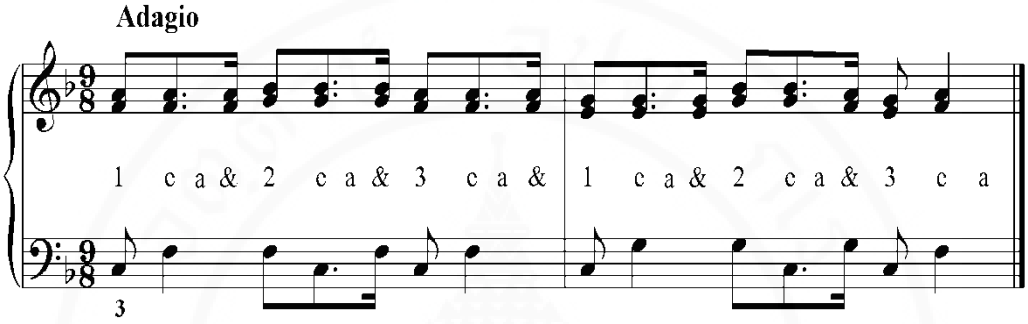
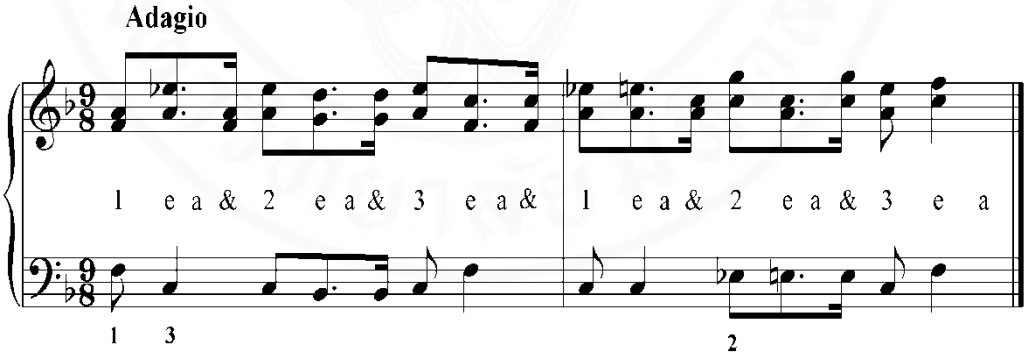
No. 1



Adagio means at ease. Adagio is not slow as largo, but it is slower than andante.

No. 2



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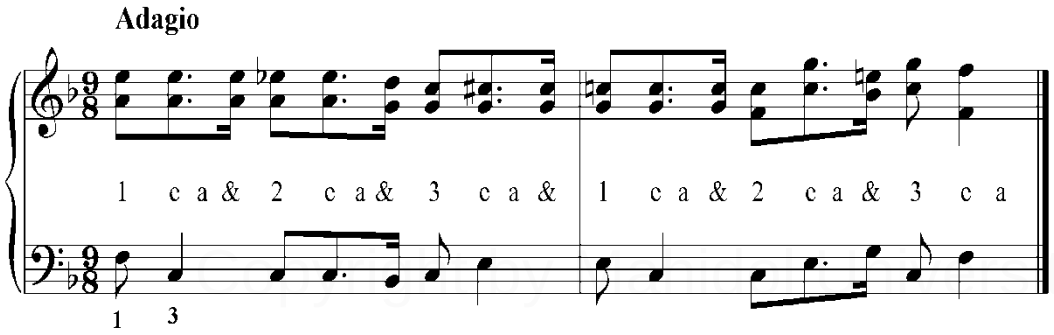

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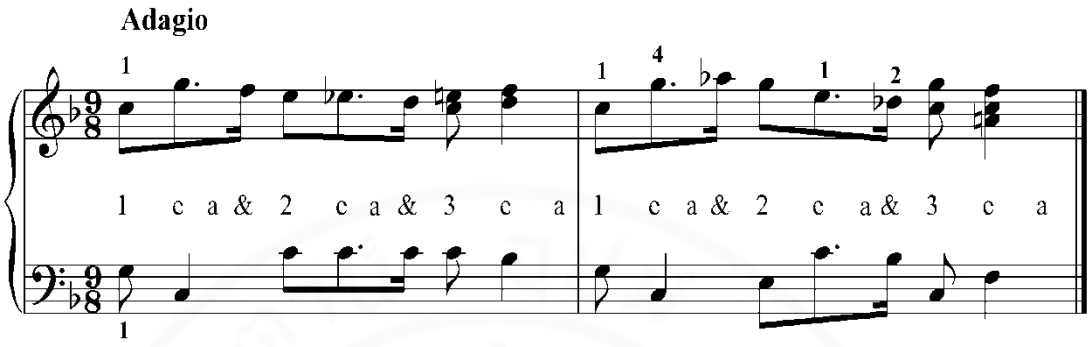

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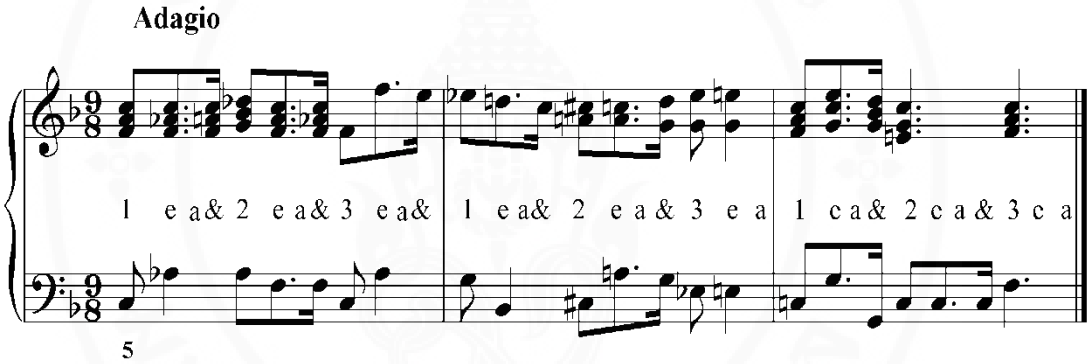

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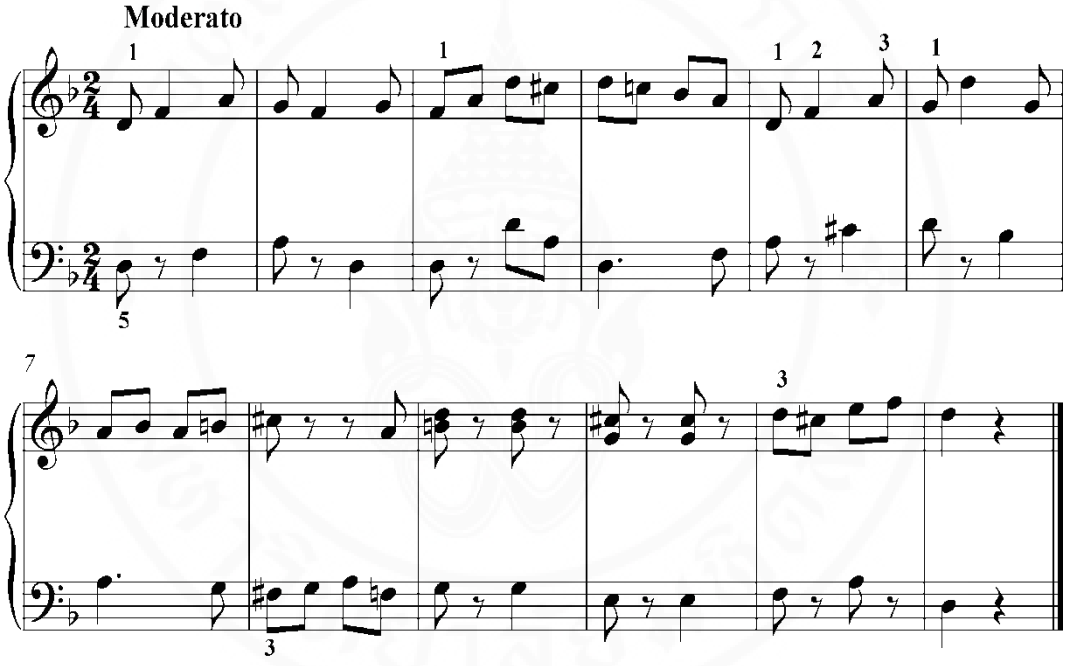
Chapter 2

Episode 2.1

Pre/Post-exercise 2.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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1. Tapping exercises

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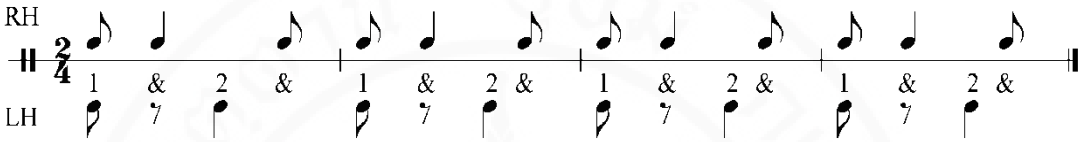
No. 1



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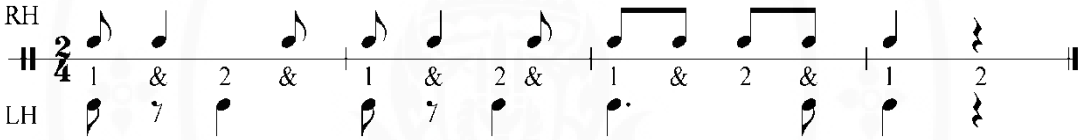

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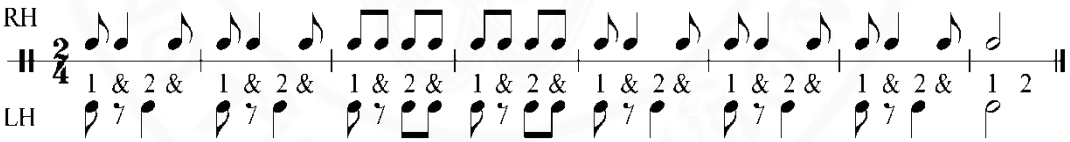

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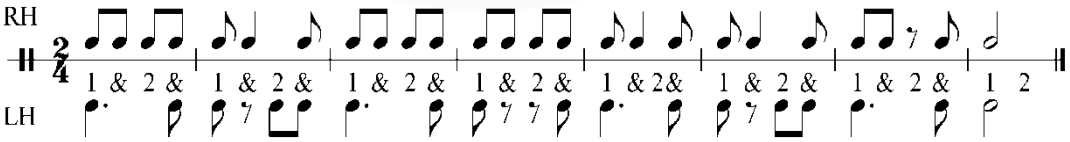

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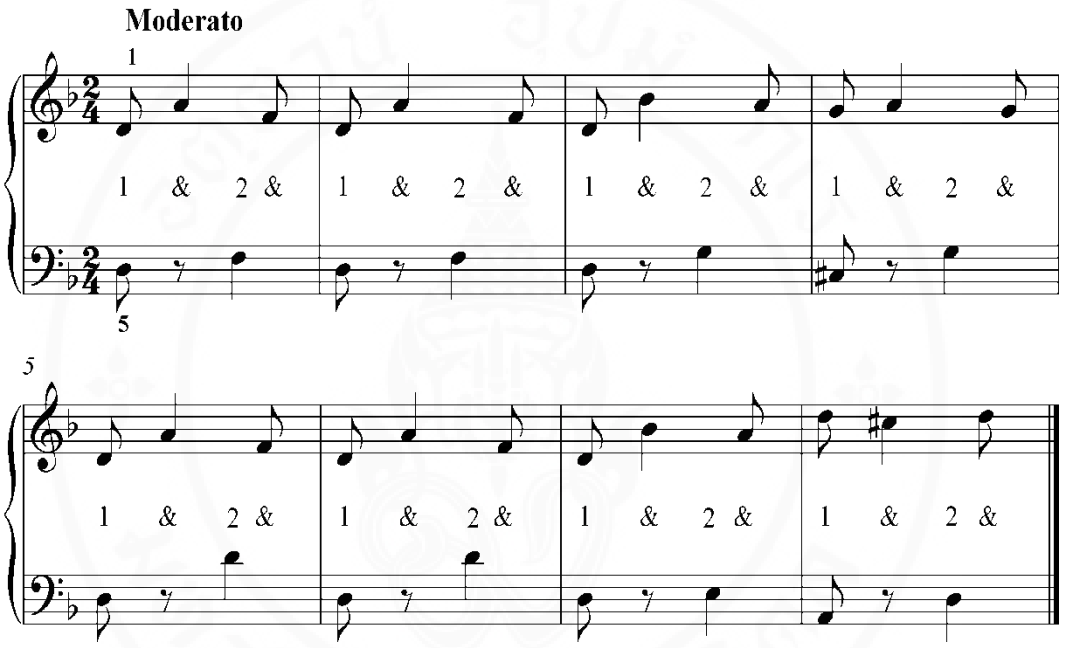
2. Exercises

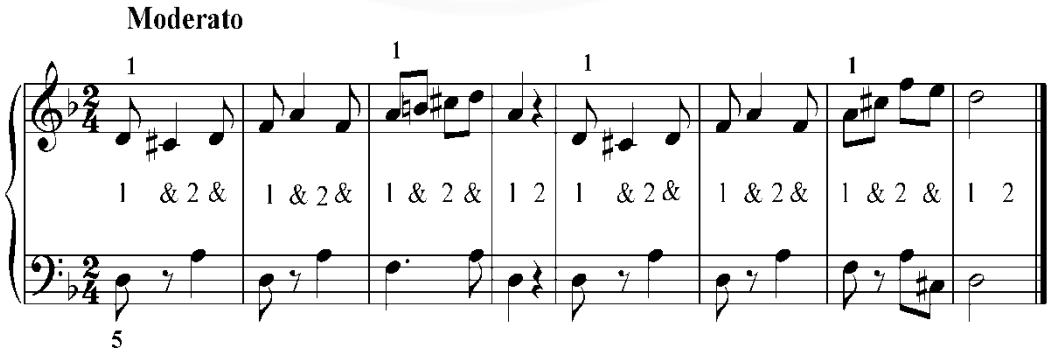
See the blue card

No. 1



Moderato means moderate.

No. 2



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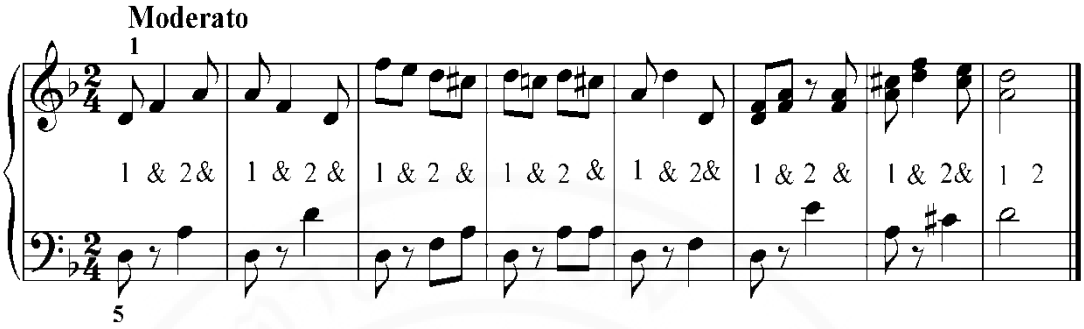
No. 3



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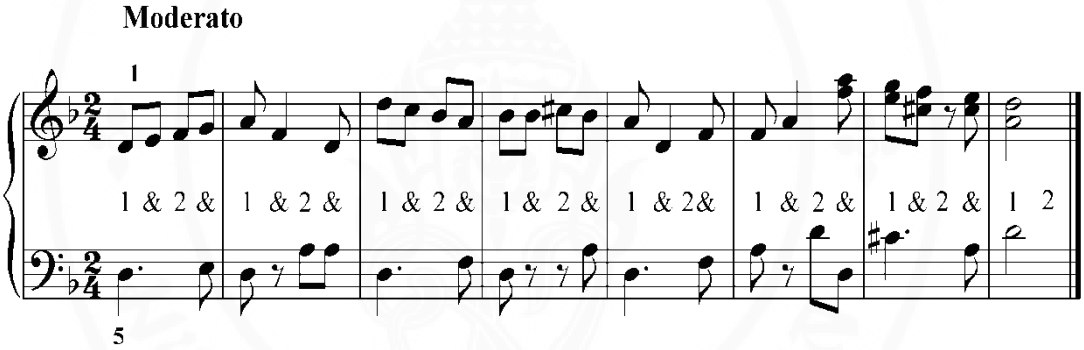

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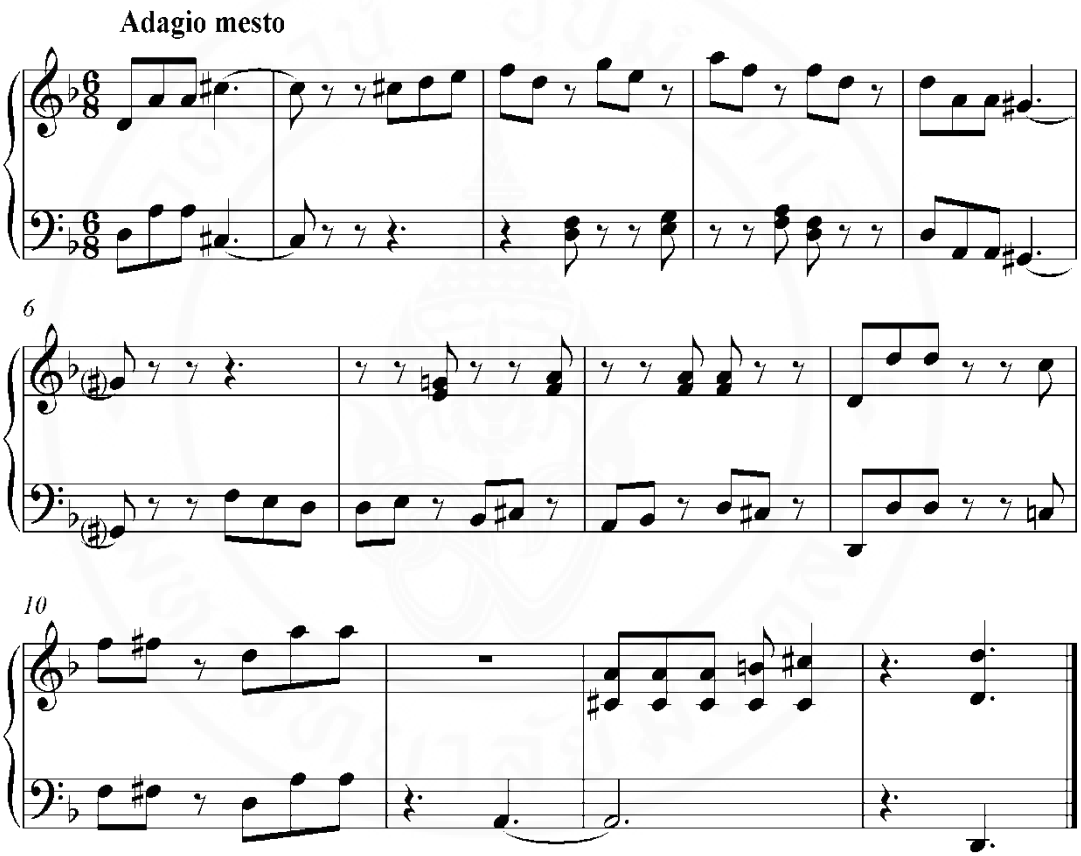
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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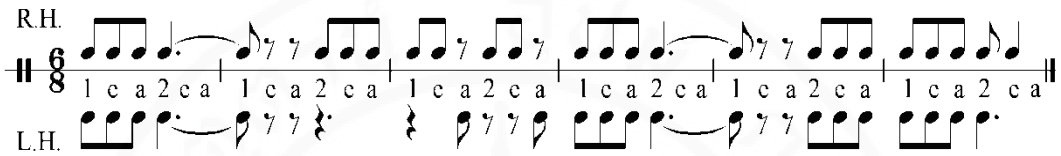
1. Tapping exercises

See the pink card

No. 1



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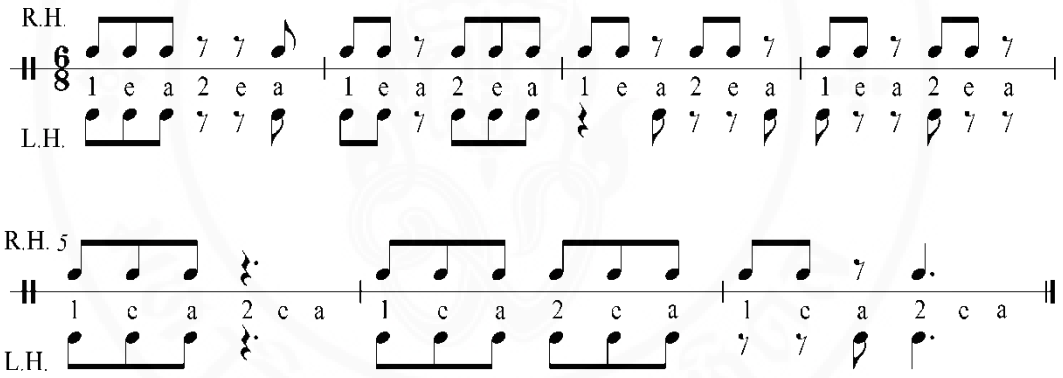

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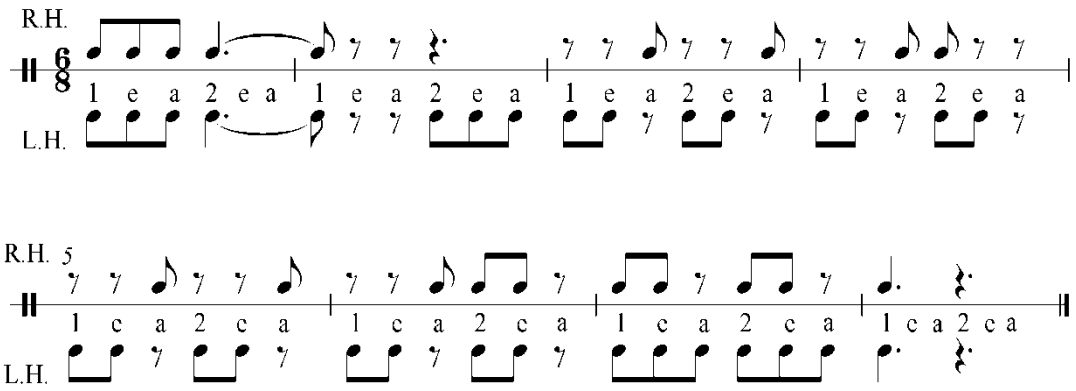

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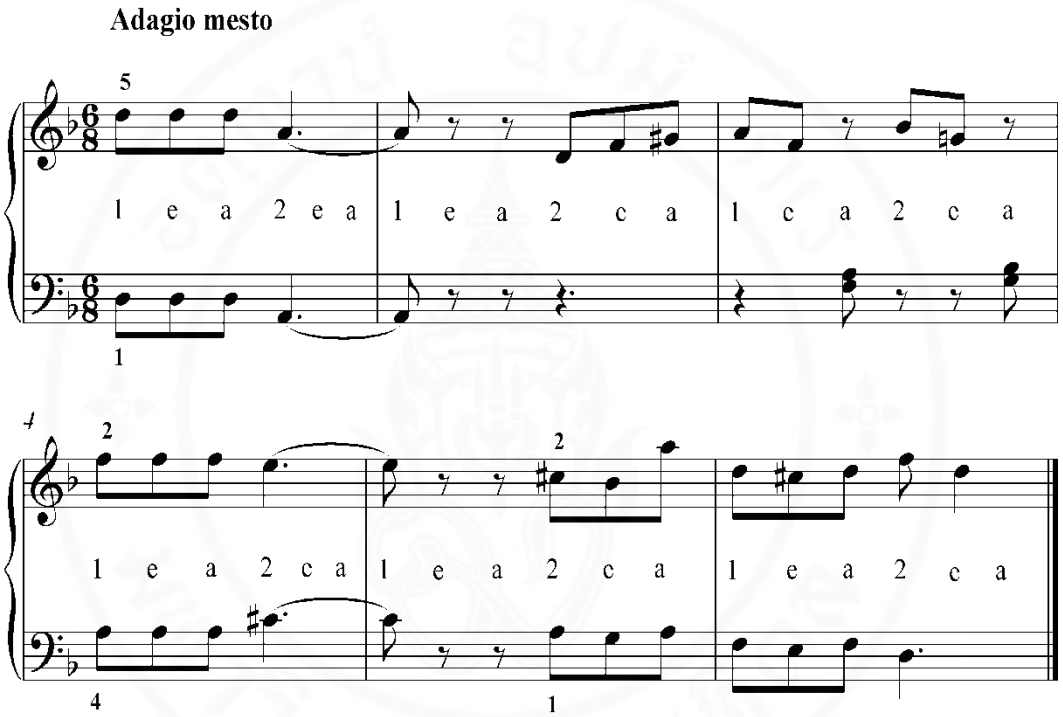
2. Exercises

See the blue card

No. 1



Adagio mesto means mournful slow.

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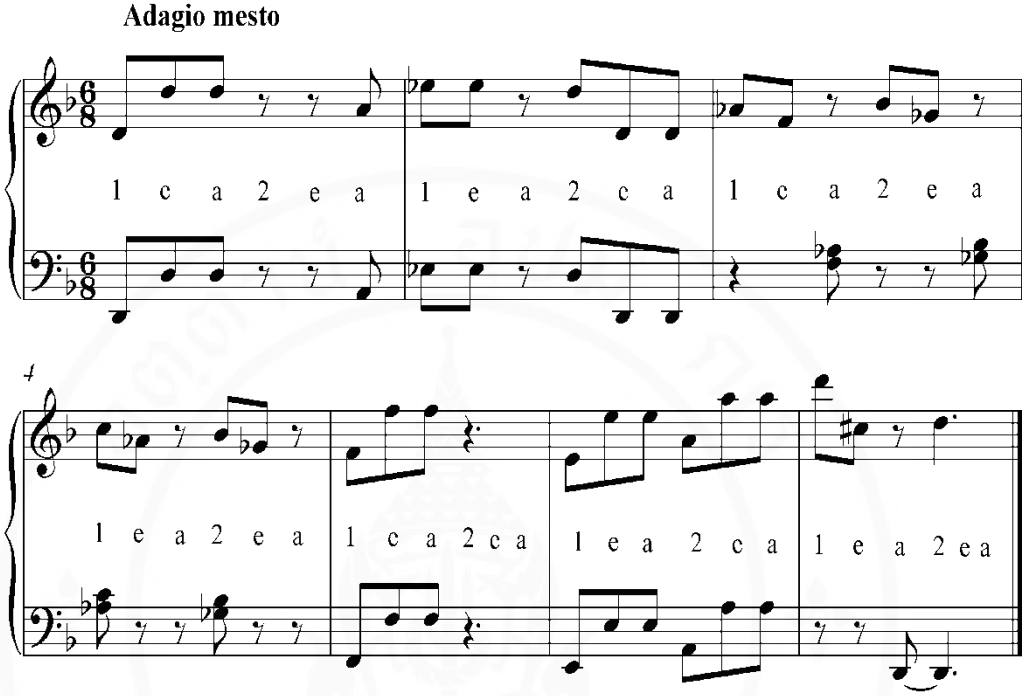
No. 2



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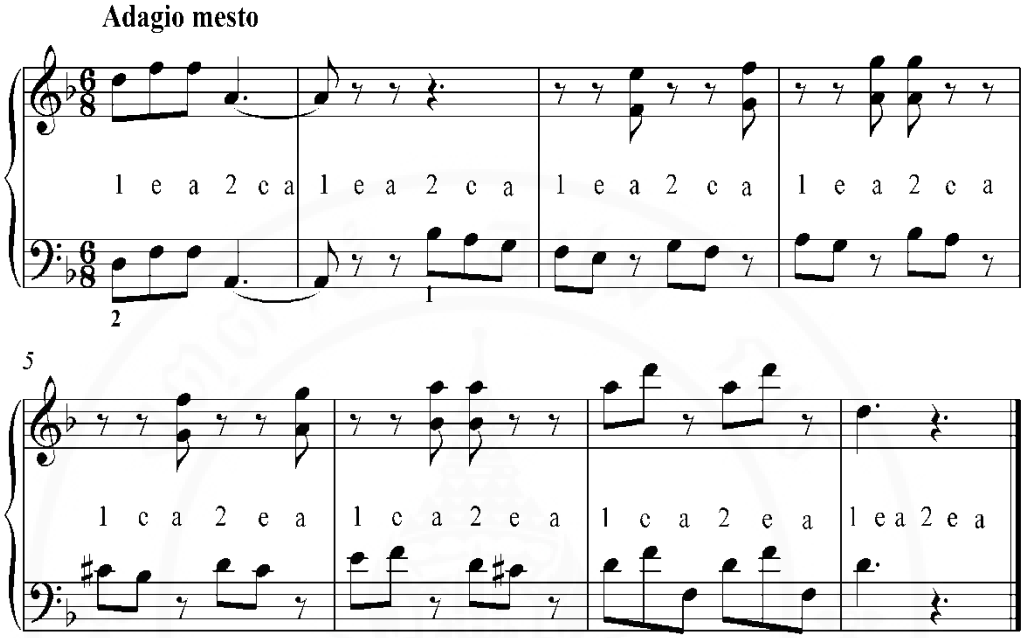
No. 3



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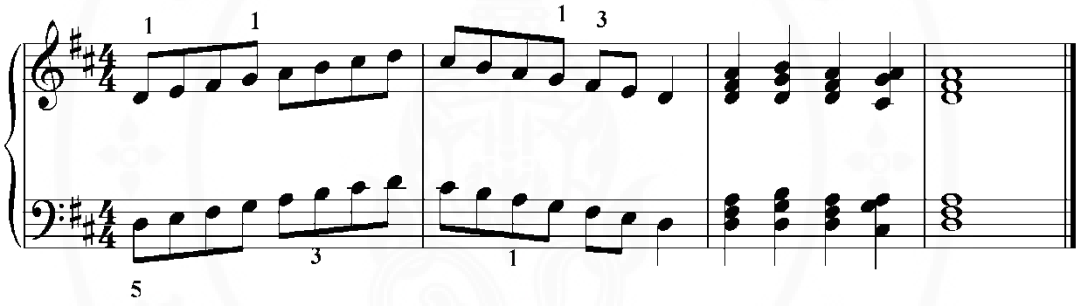
BOOK 5

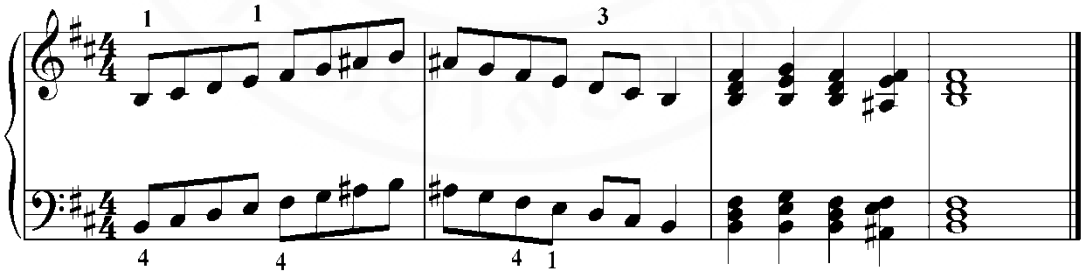
UNIT 4

Unit 4: Review of D major and B minor

Key signature with two sharps
D major

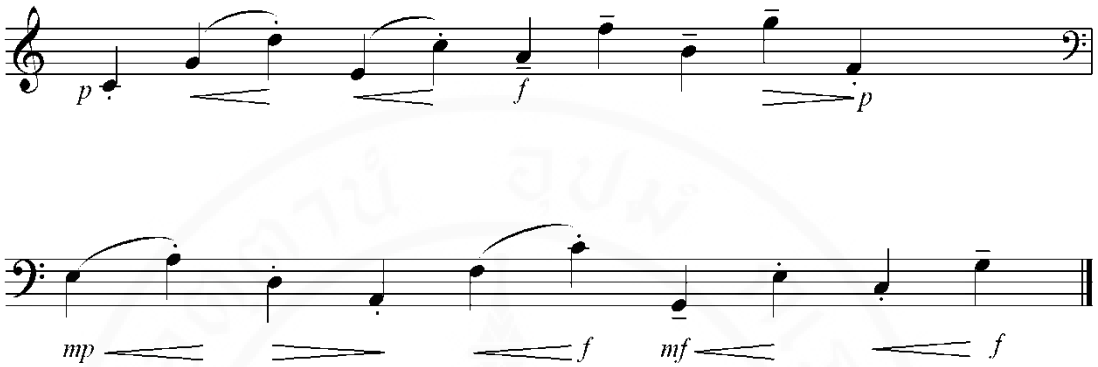


B harmonic minor



The secret of key specification…
When you see the piece with two sharps in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of D major and B minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

Review of pitch reading and pitch positioning with dynamic and articulation marks



** More exercises, see the supplementary book.

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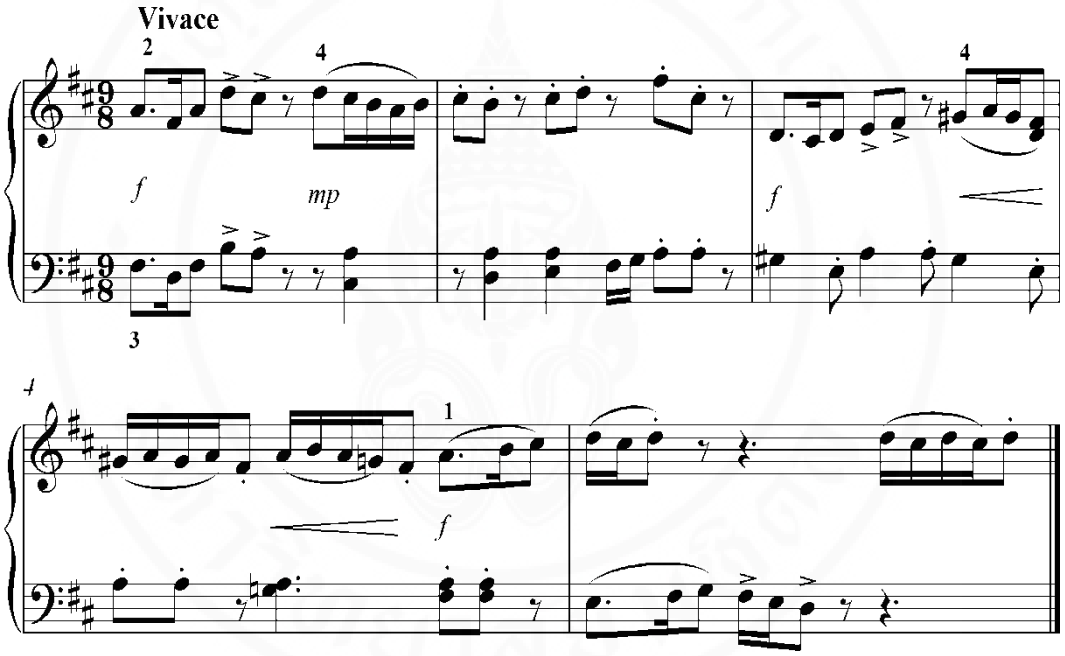
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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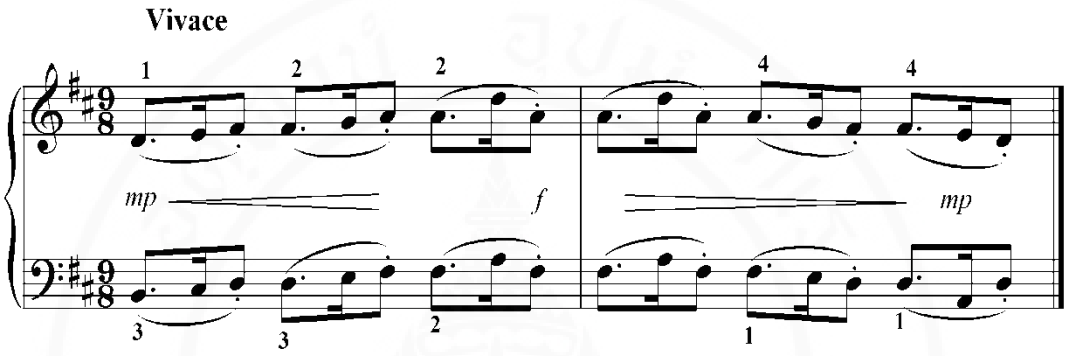
Exercises

See the blue card

No. 1



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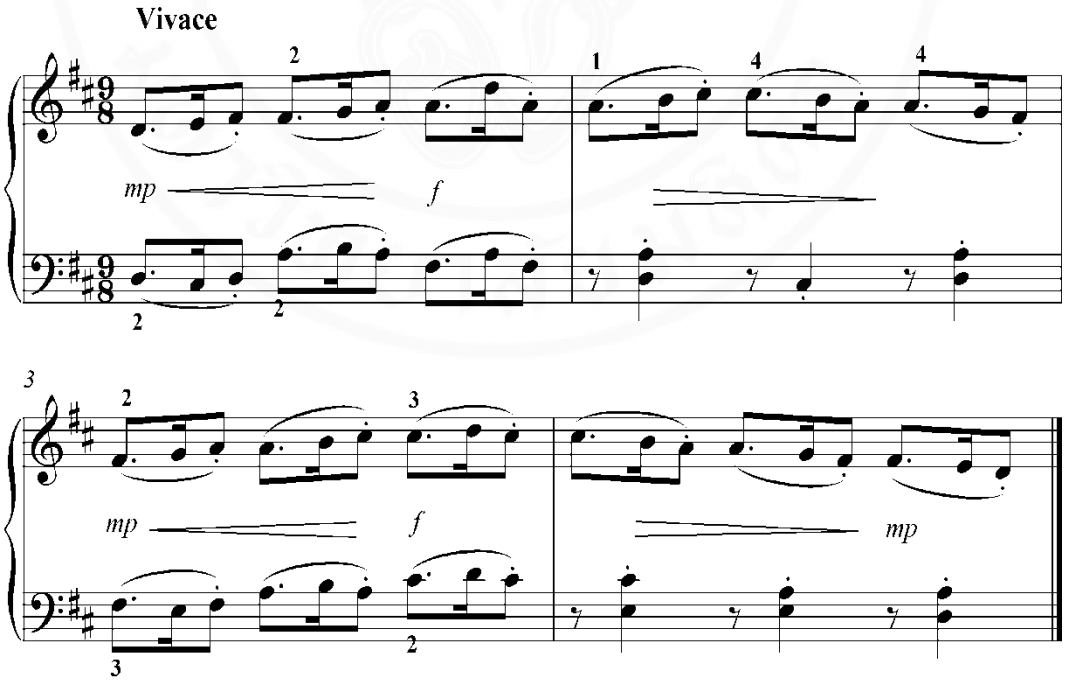

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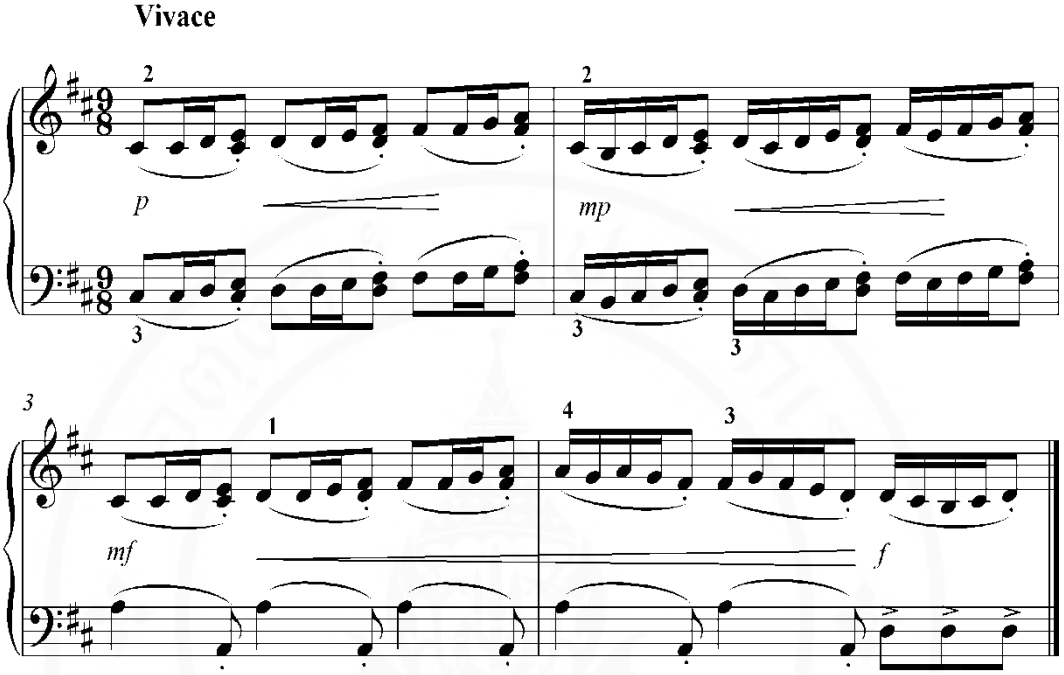
No. 3



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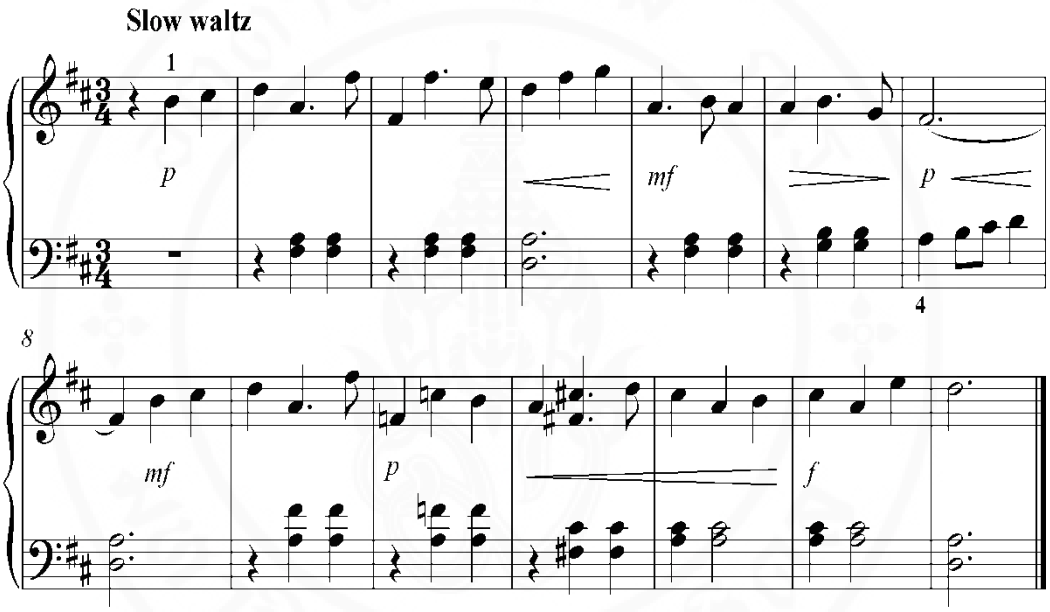
Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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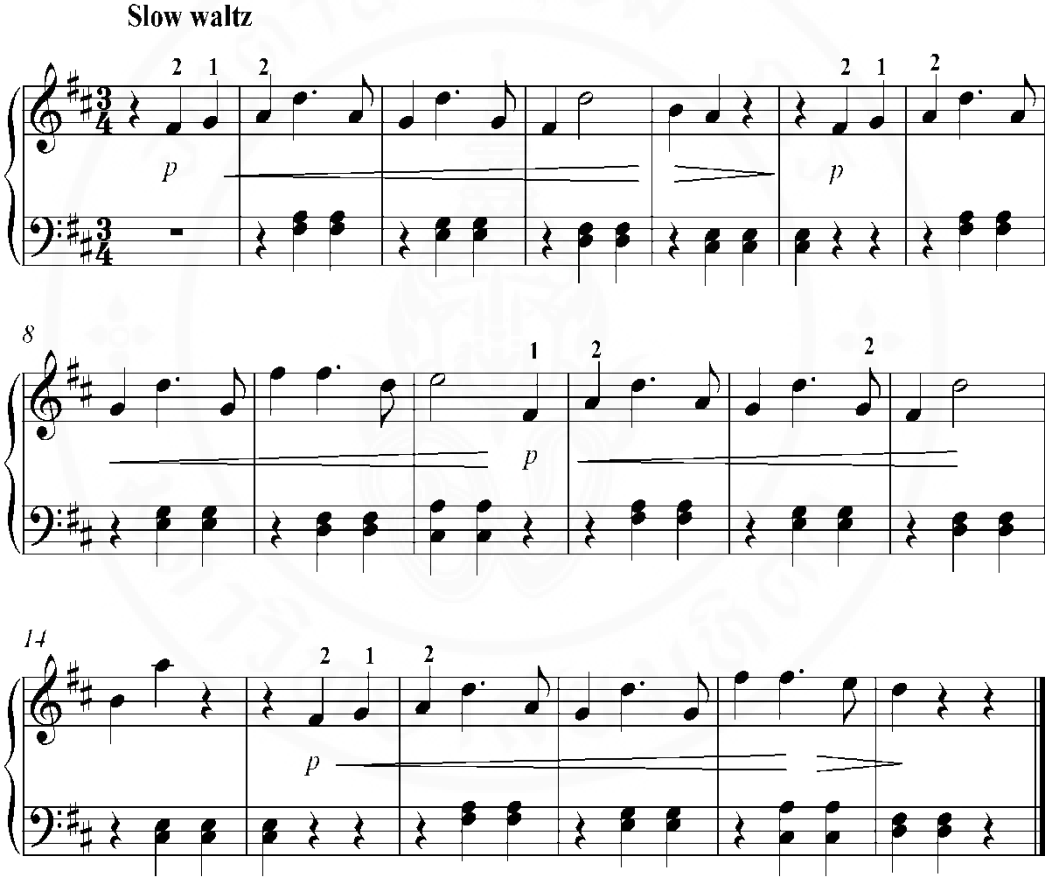
Exercises

See the blue card

No. 1



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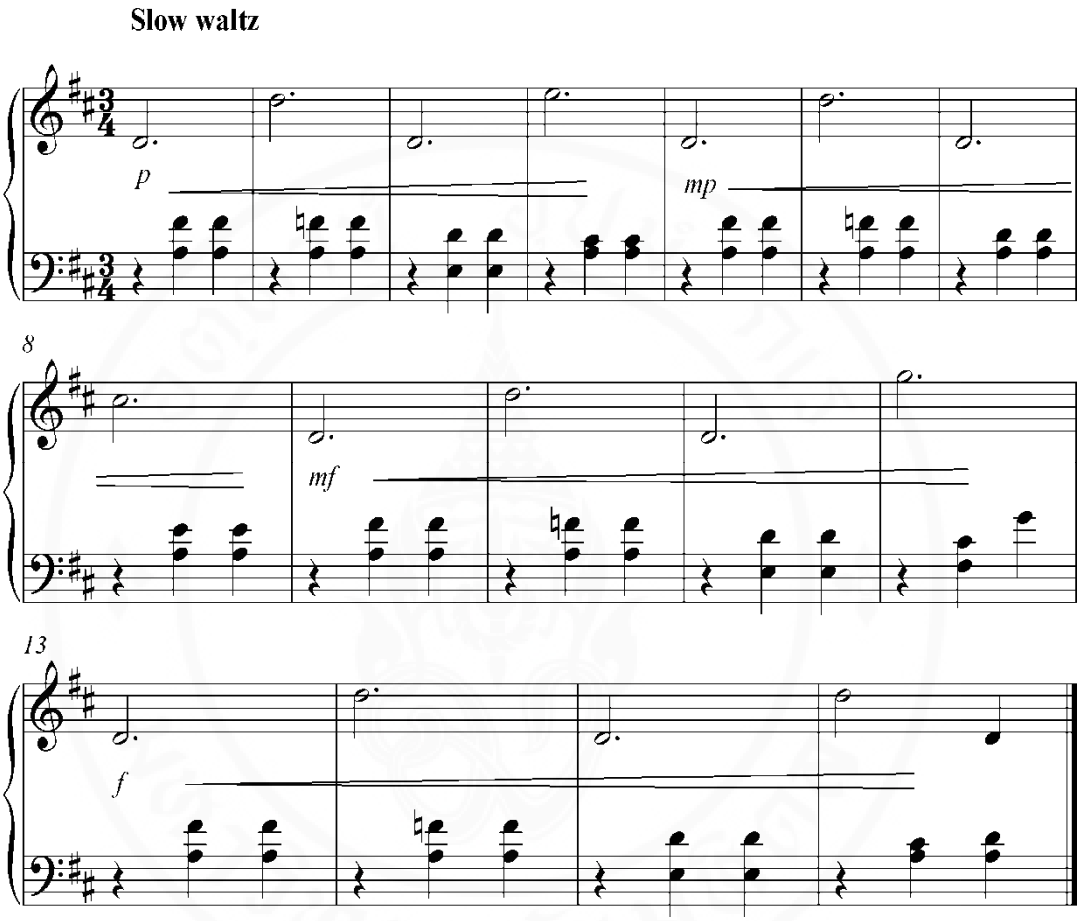
No. 2



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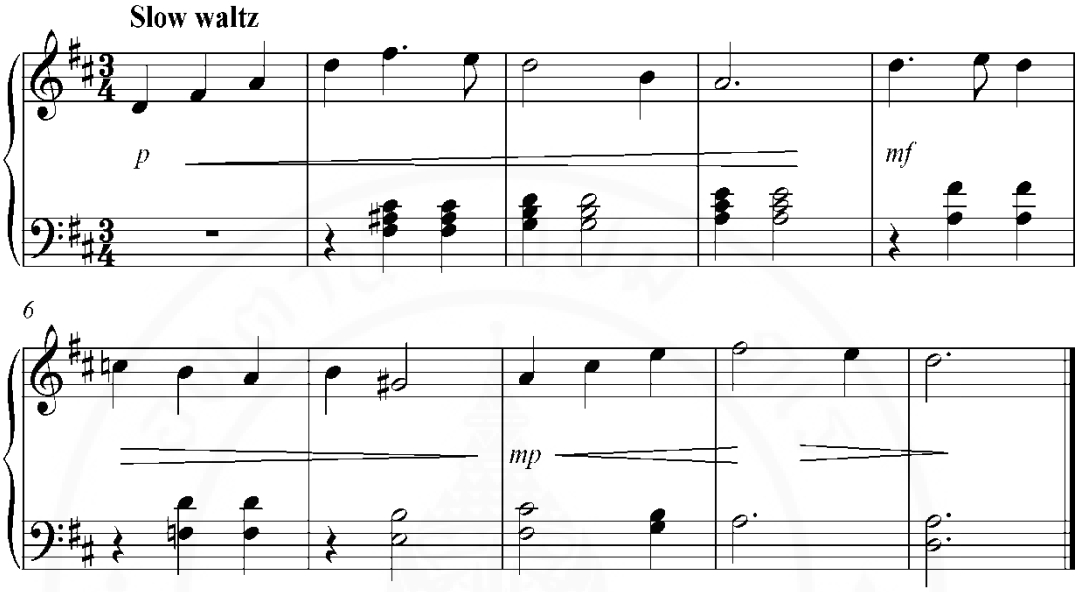
No. 3



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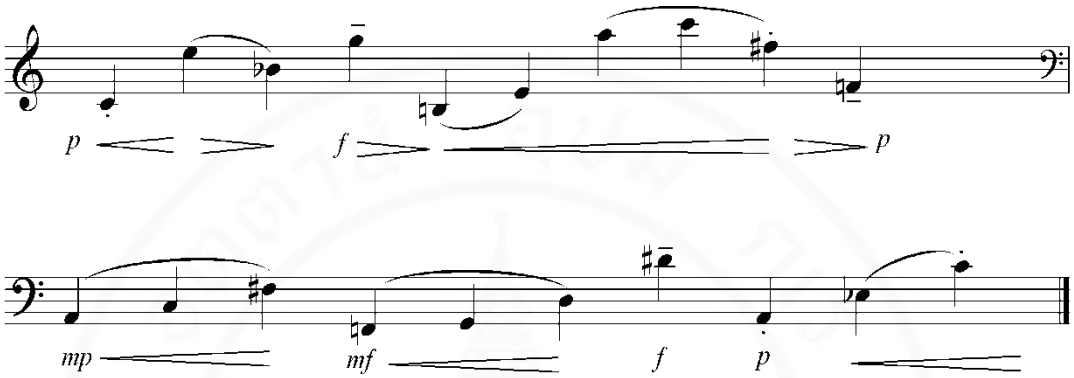
Review of pitch reading and pitch positioning with dynamic and articulation marks



** More exercises, see the supplementary book.

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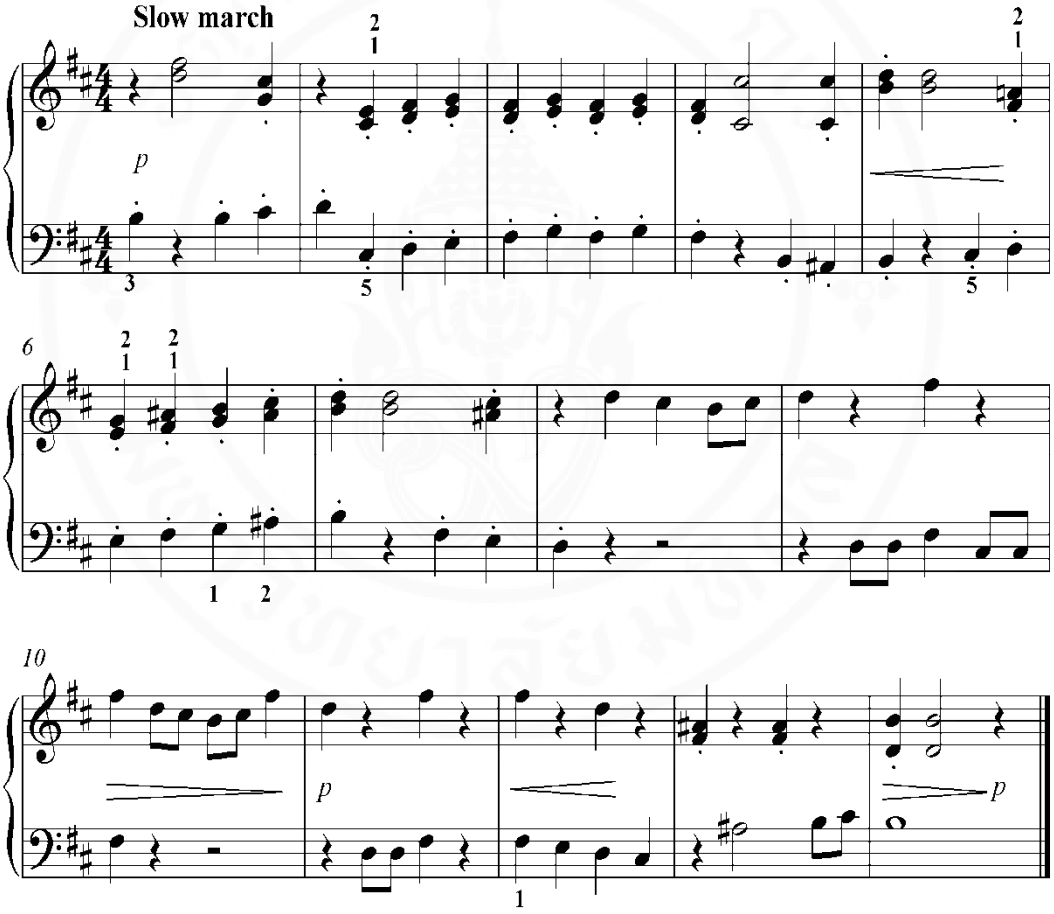
Chapter 2

Episode 2.1

Pre/Post-exercise 2.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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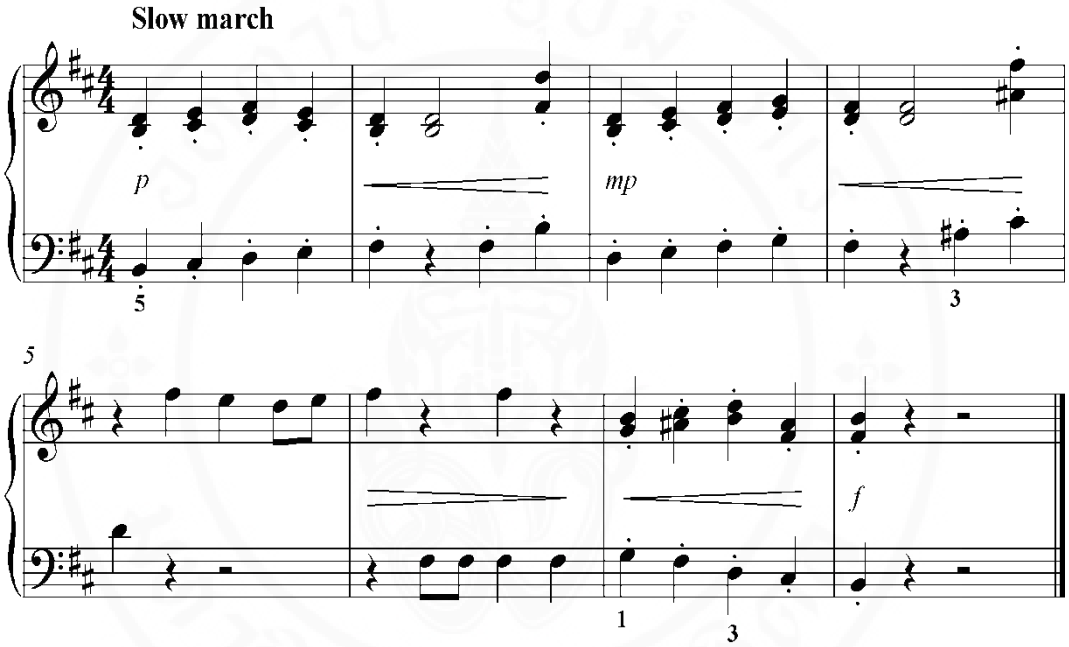
Exercise

See the blue card

No. 1



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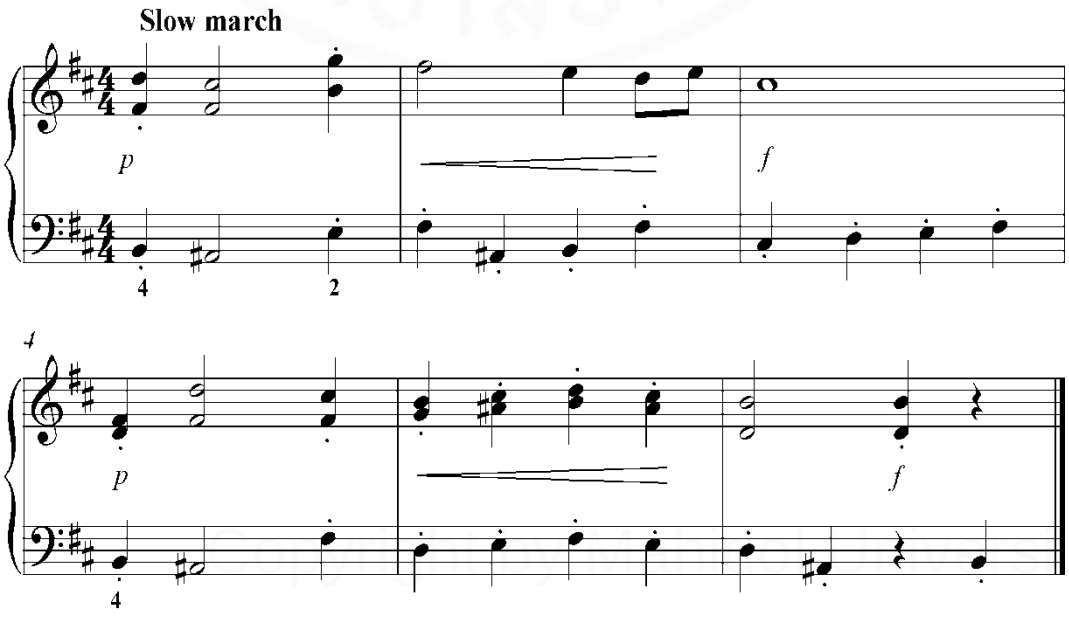

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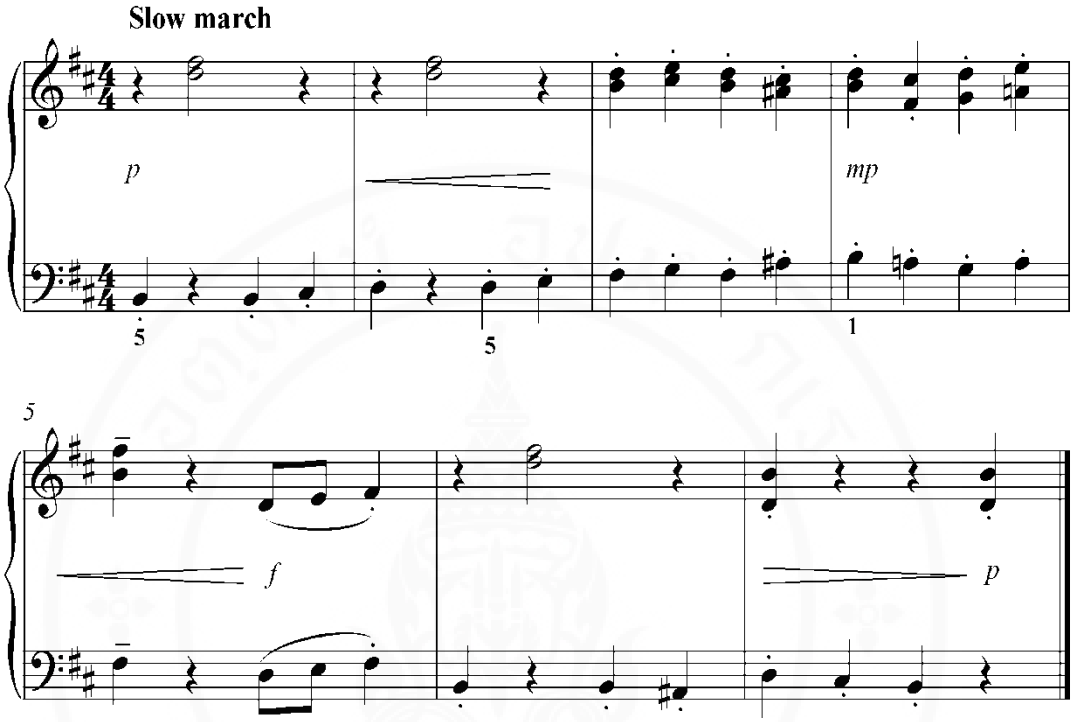

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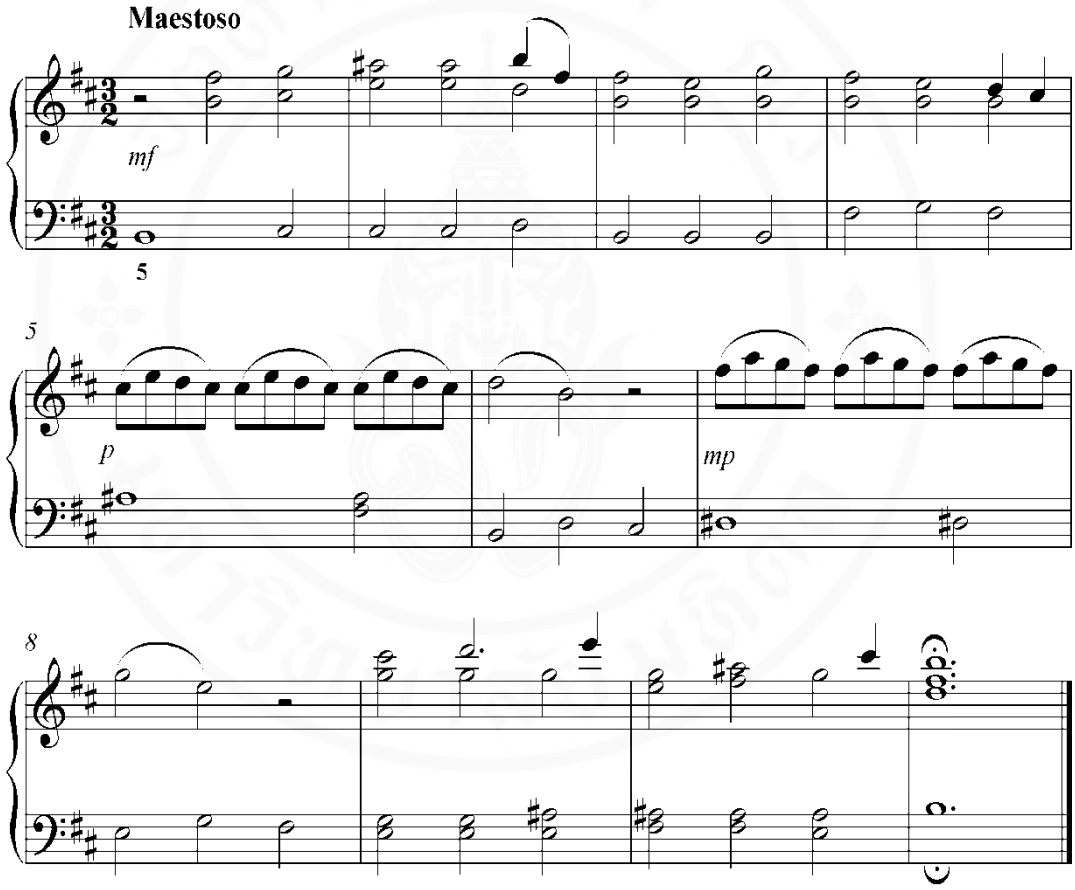
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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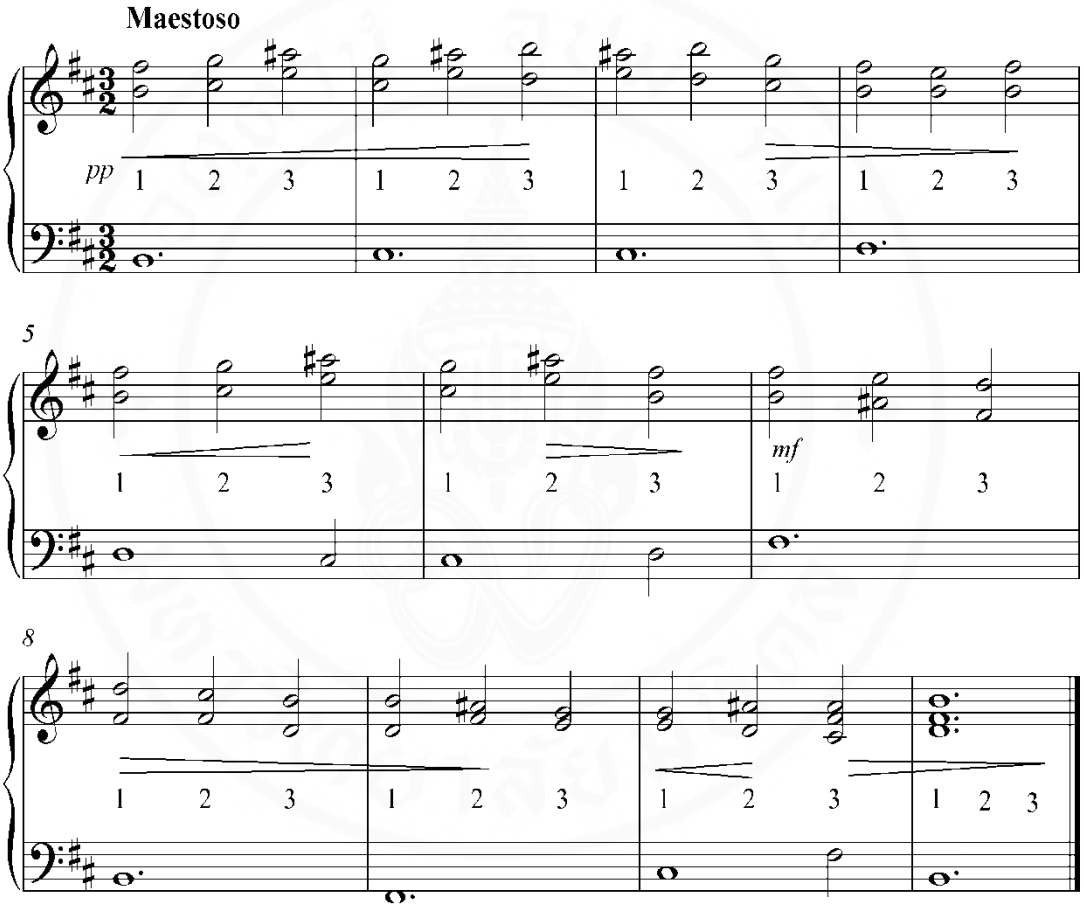
Exercises

See the blue card

No. 1



Time signature 3/2, half note gets 1 beat, quarter note gets 1/2 beat, and eighth note gets 1/4 beat.

Maestoso means majestic.

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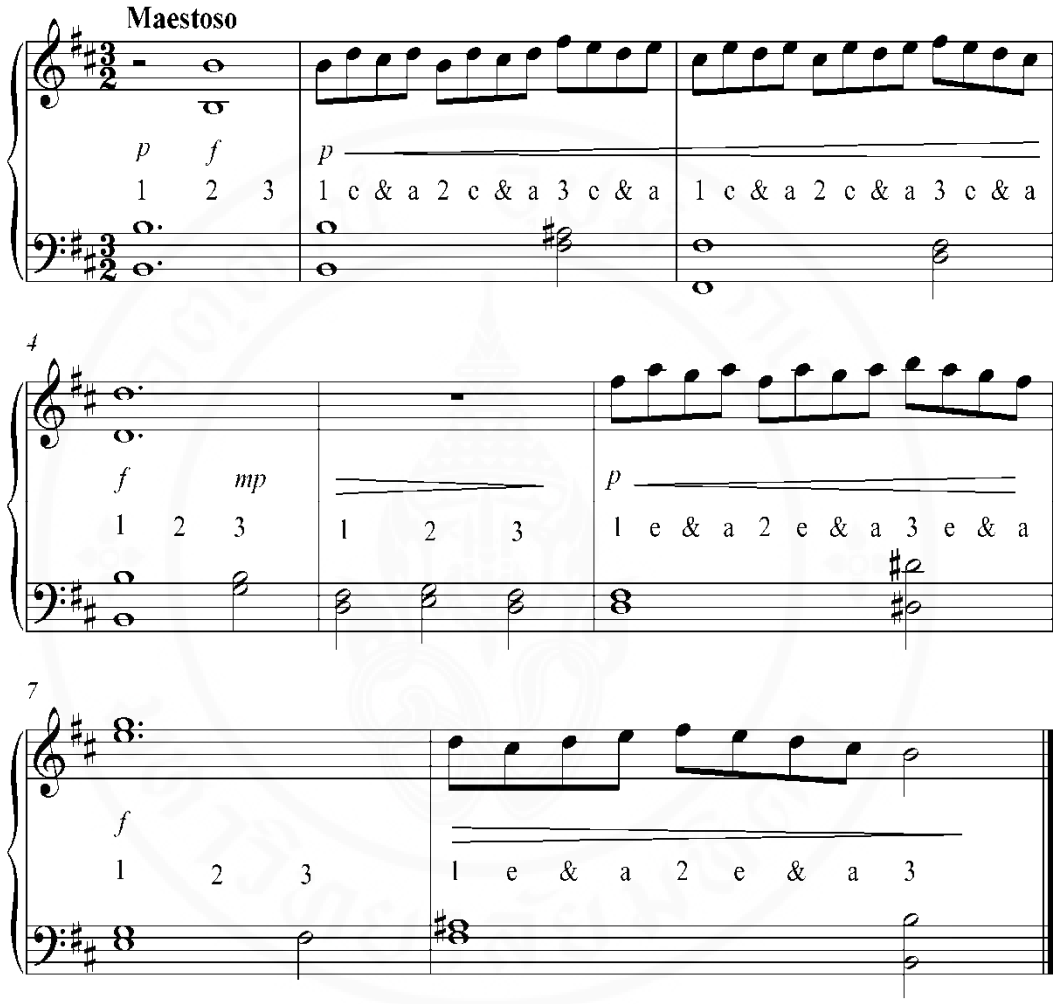
No. 2



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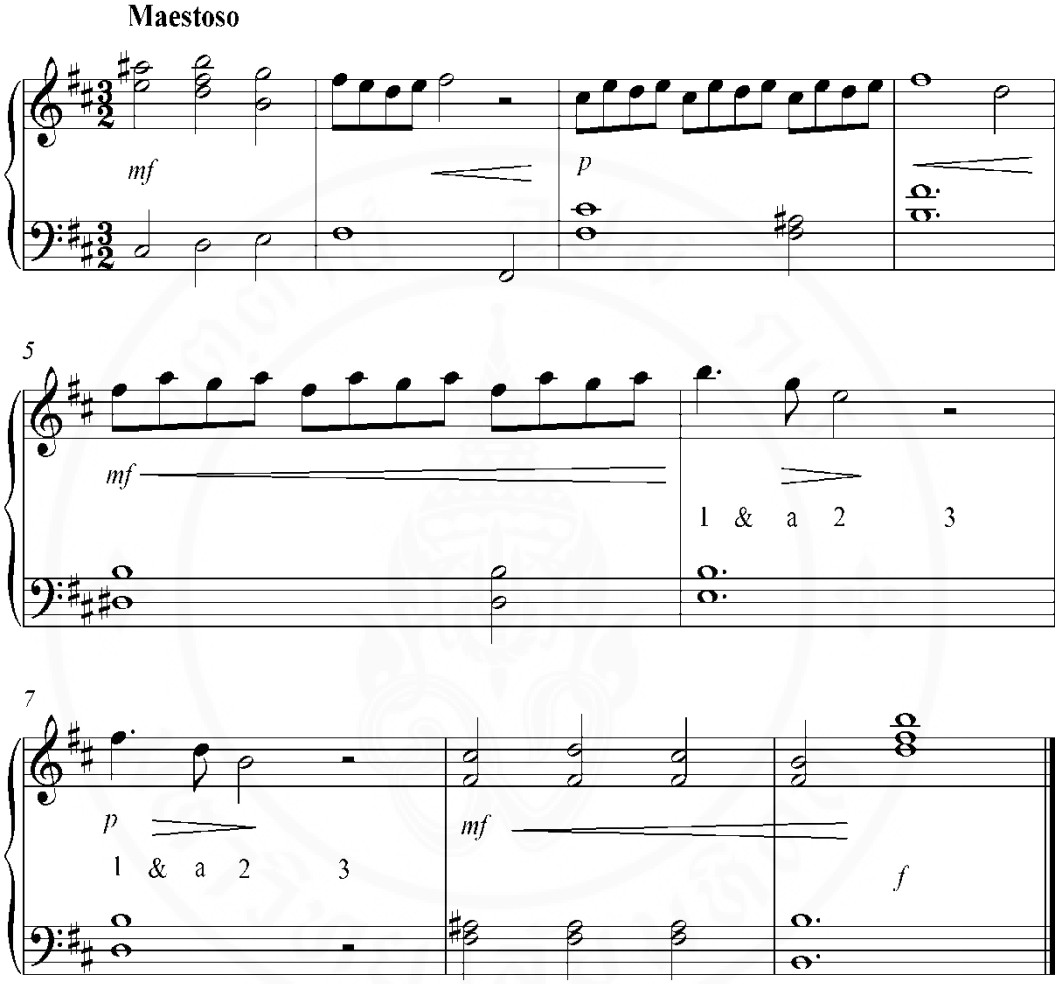

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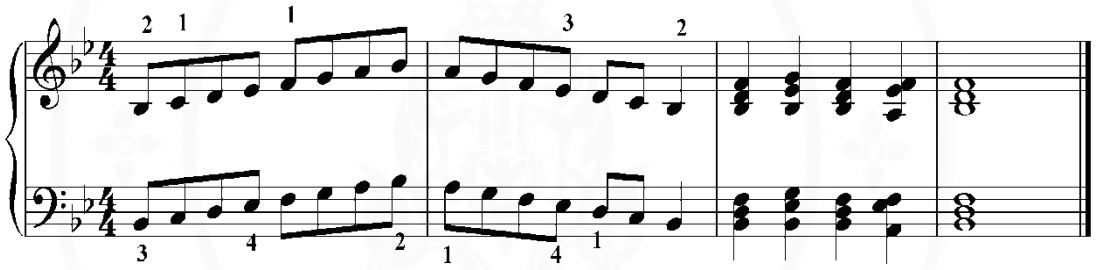
BOOK 6

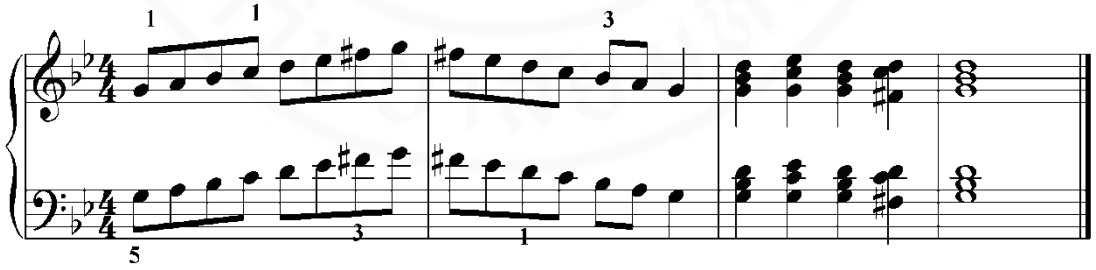
UNIT 5

Unit 5: Review of Bb major and G minor

Key signature with two flats
Bb major

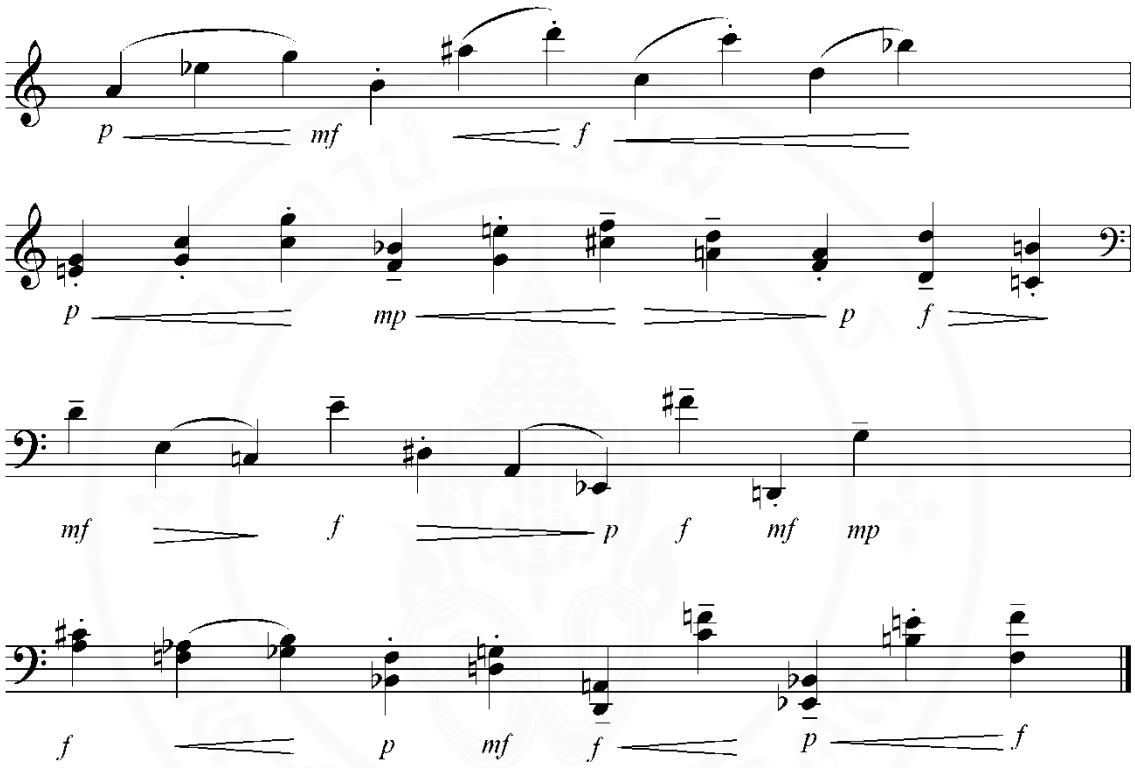


G harmonic minor



The secret of key specification…
When you see the piece with two flats in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of Bb major and G minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

Review of pitch reading and pitch positioning with dynamic and articulation marks



** More exercises, see the supplementary book.

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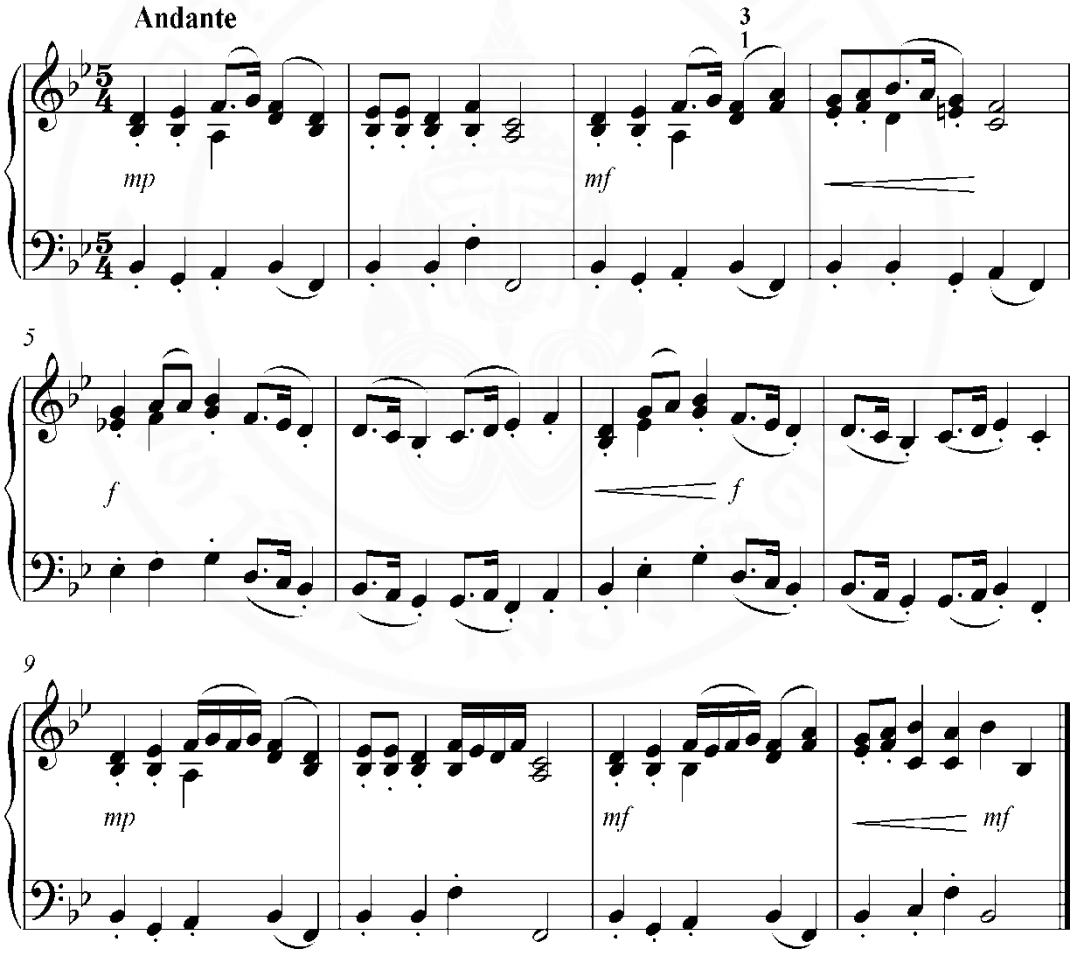
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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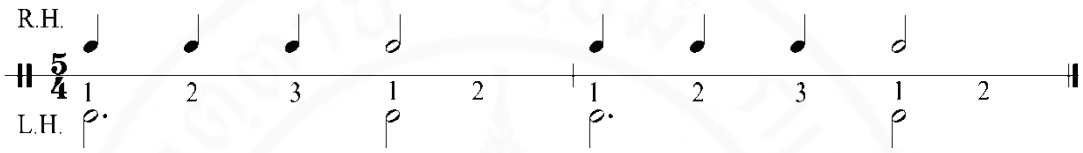
1. Tapping exercises

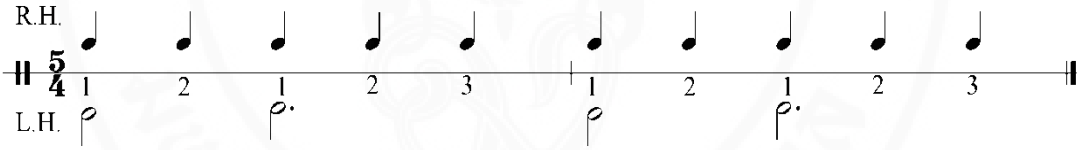
See the pink card

No. 1



Time signature 5/4 is different from 2/4,3/4, and 4/4. Those time signatures are simple time signatures, but 5/4 is complex time. The complex time always feel irregularly. In this case, 5/4 sometime can be divided to 2+3 or 3+2 which depends on the clarity of the rhythmic pattern.

No. 2



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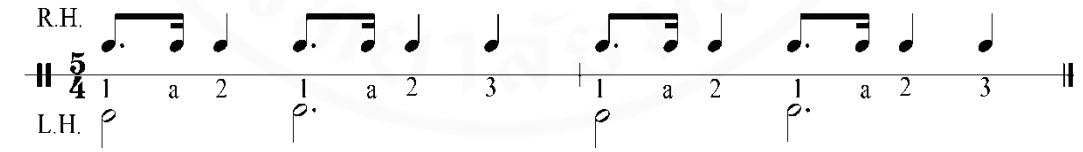

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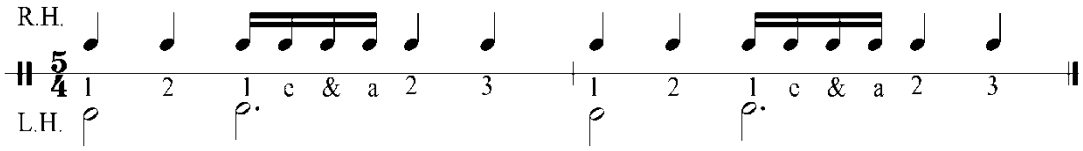

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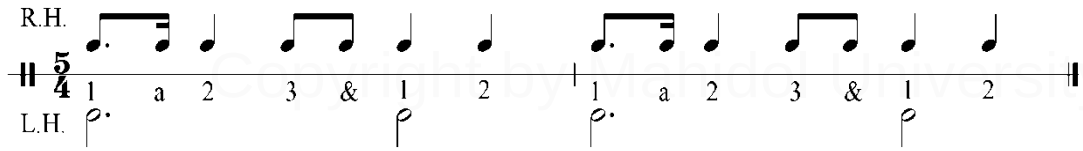

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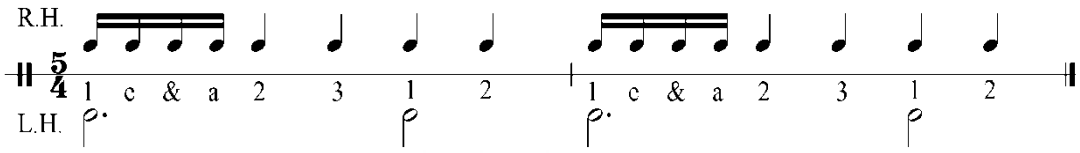
No. 6



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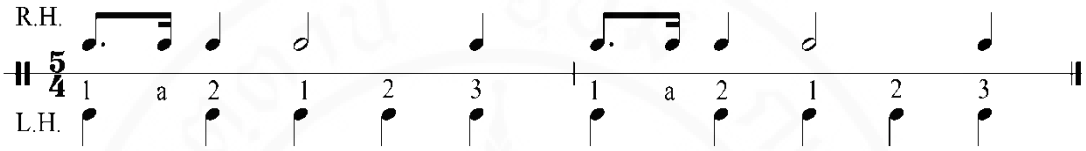

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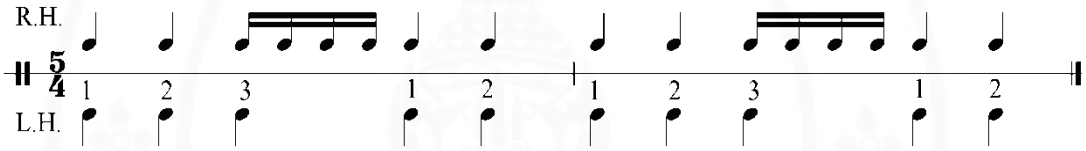

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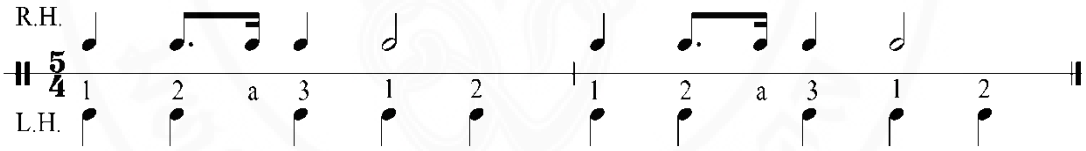

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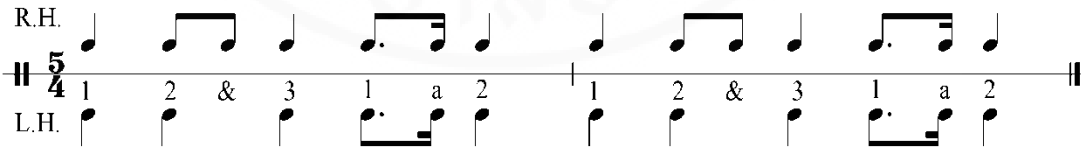

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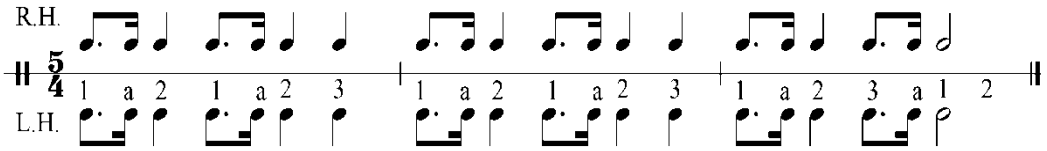

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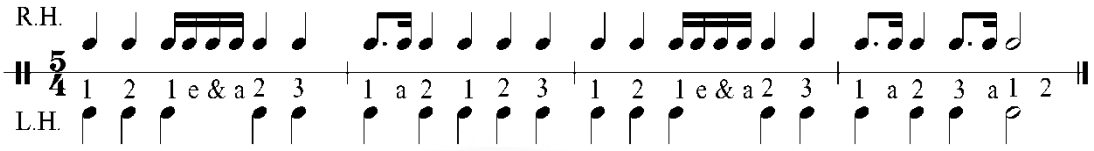

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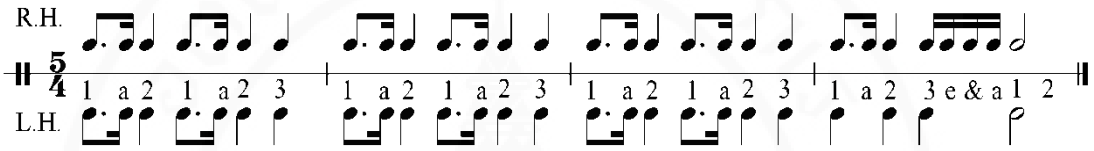

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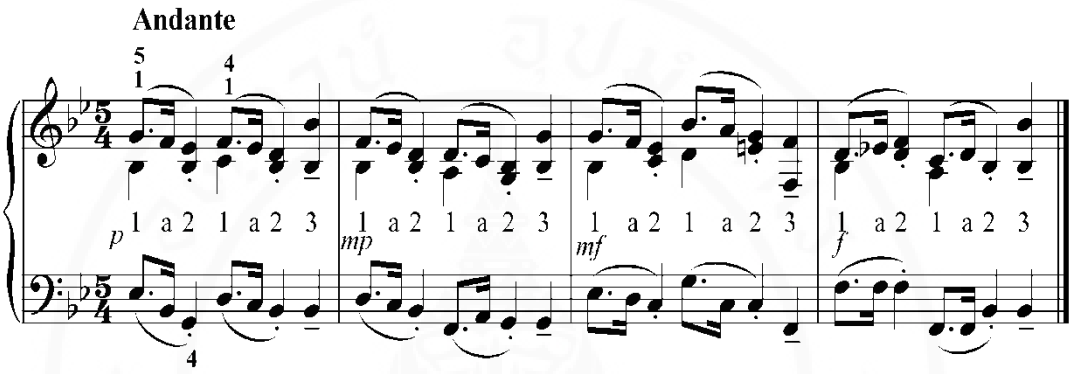
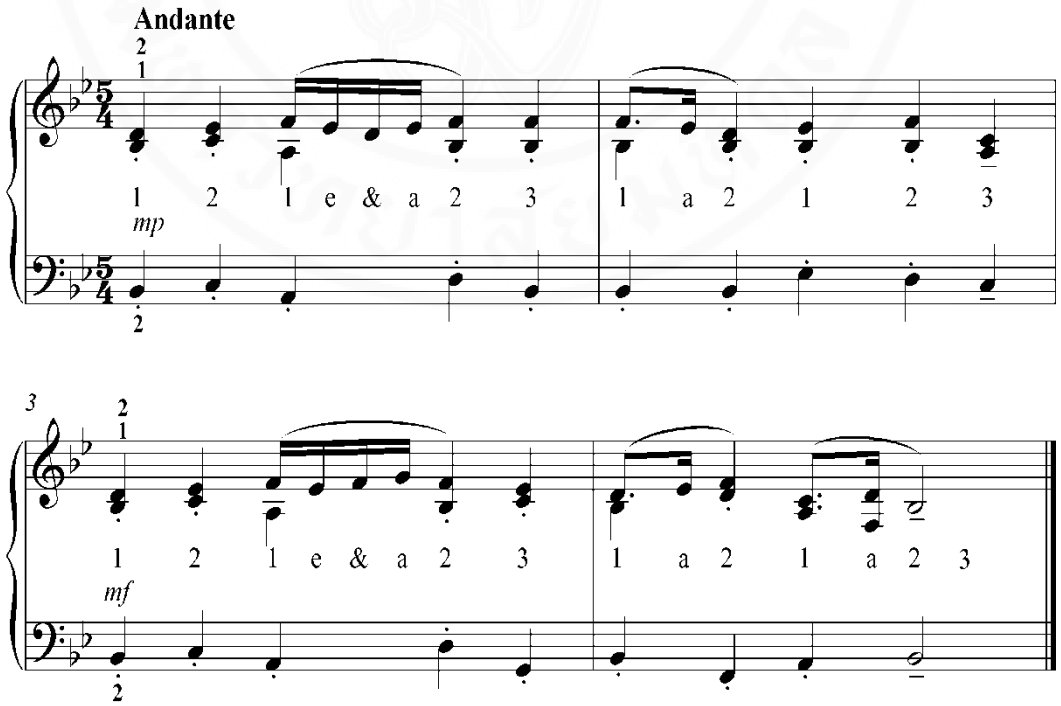
2. Exercises

See the blue card

No. 1



No. 2



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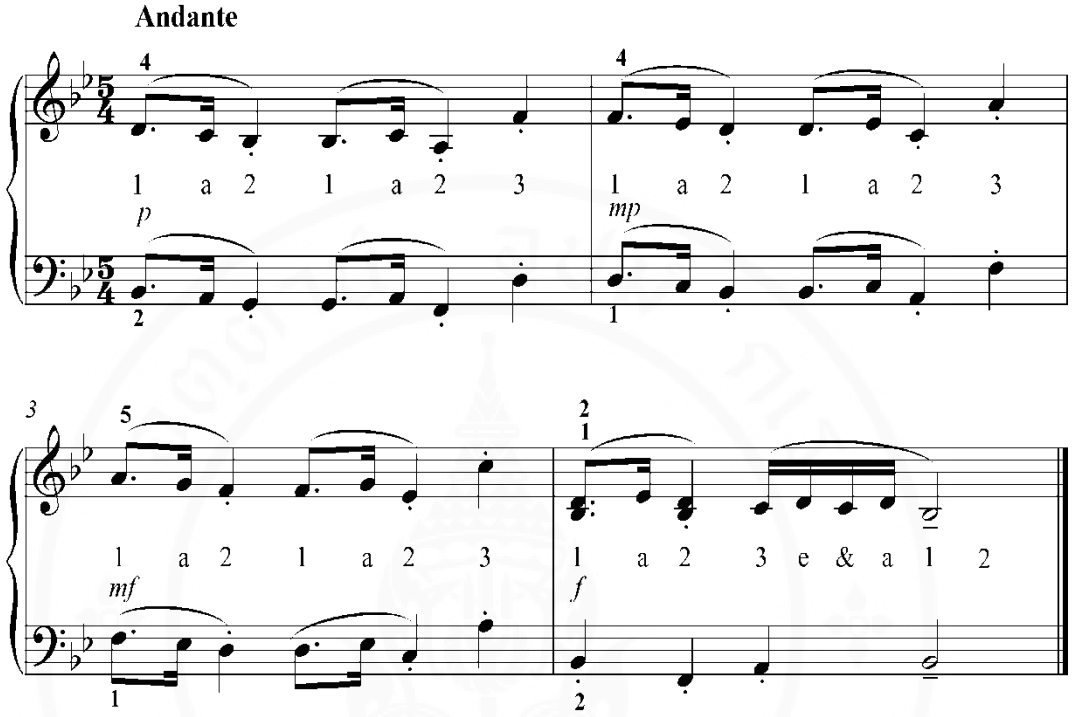
No. 3



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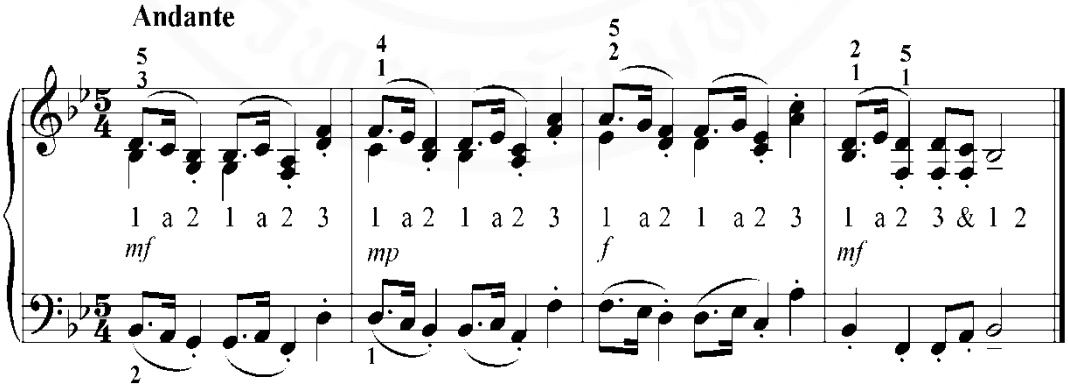

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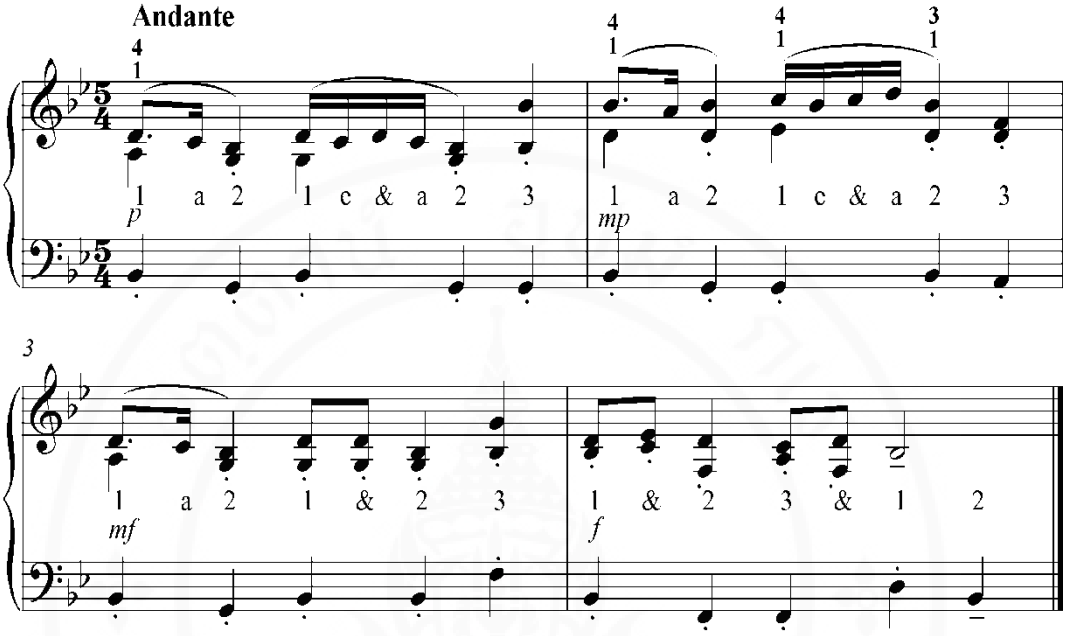
No. 5



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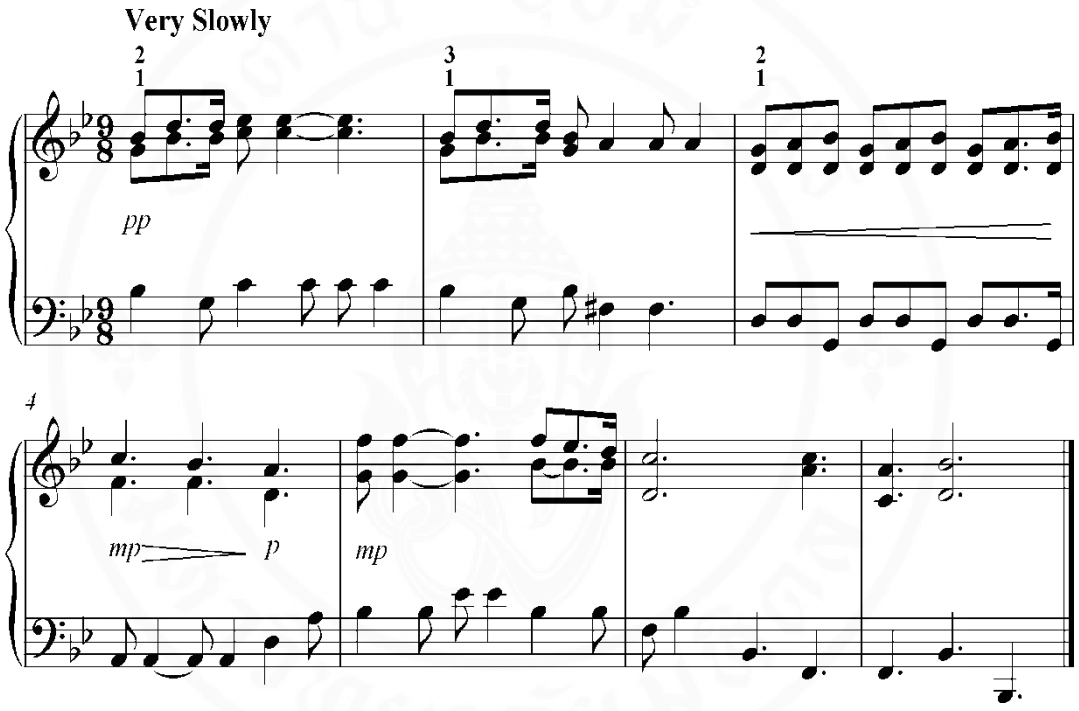
Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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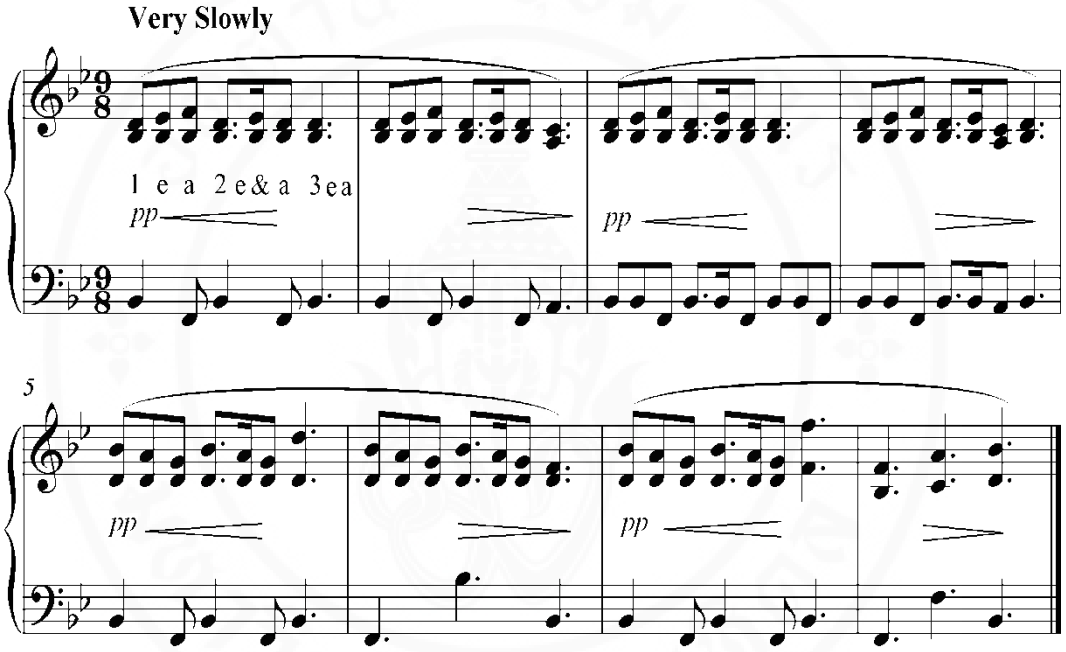
Exercises

See the blue card

No. 1



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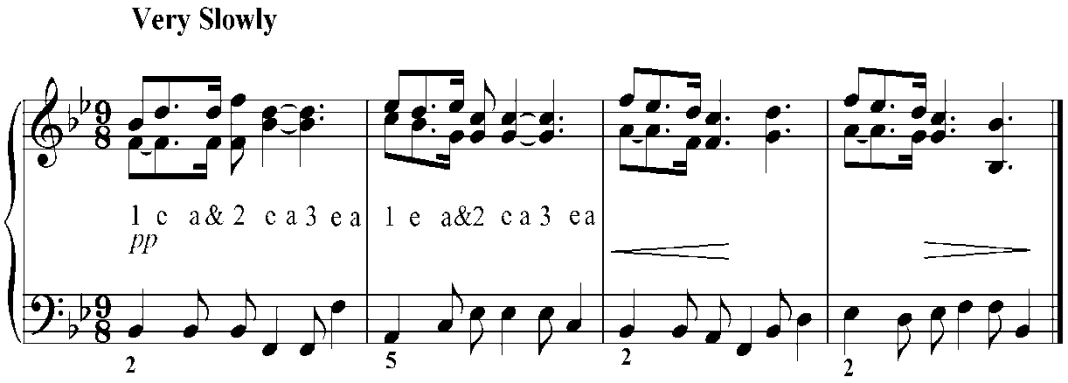

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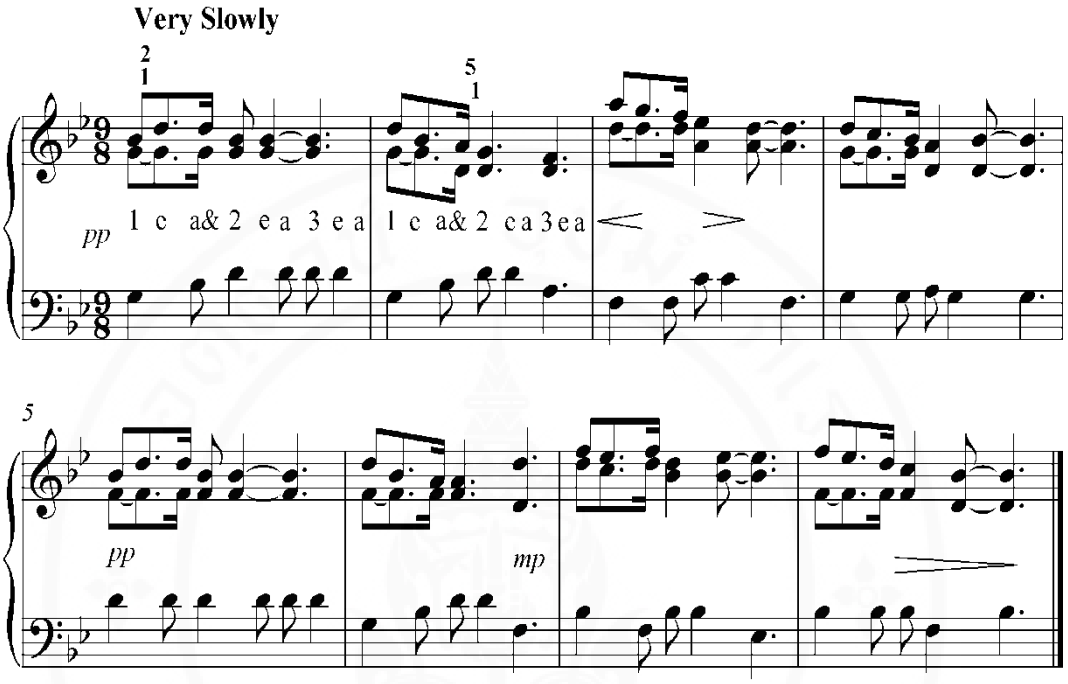

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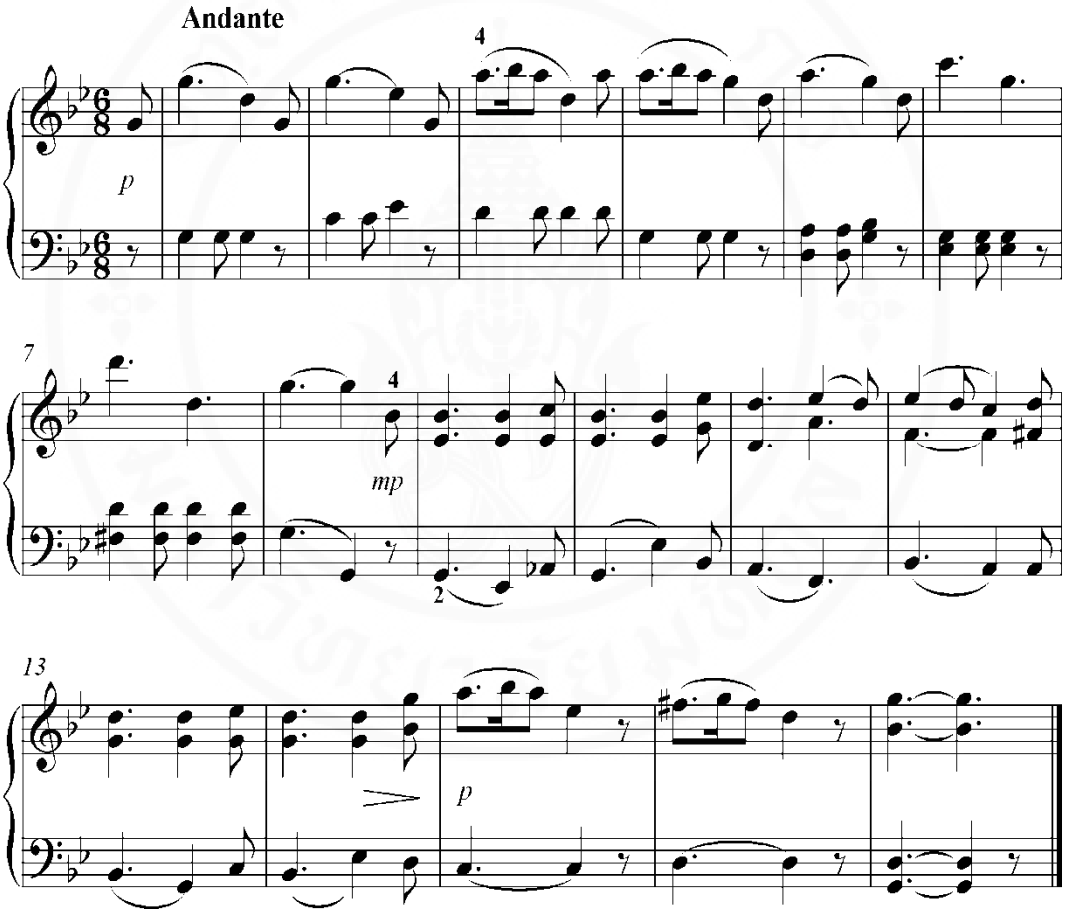
Chapter 2

Episode 2.1

Pre/Post-exercise 2.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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Exercises

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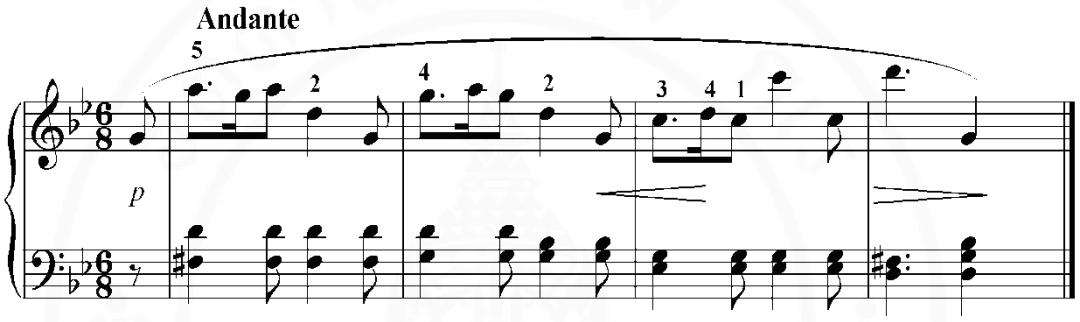
No. 1



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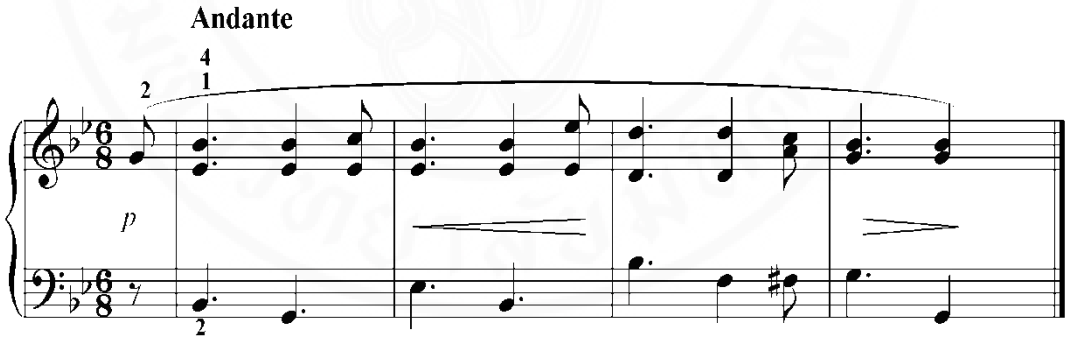

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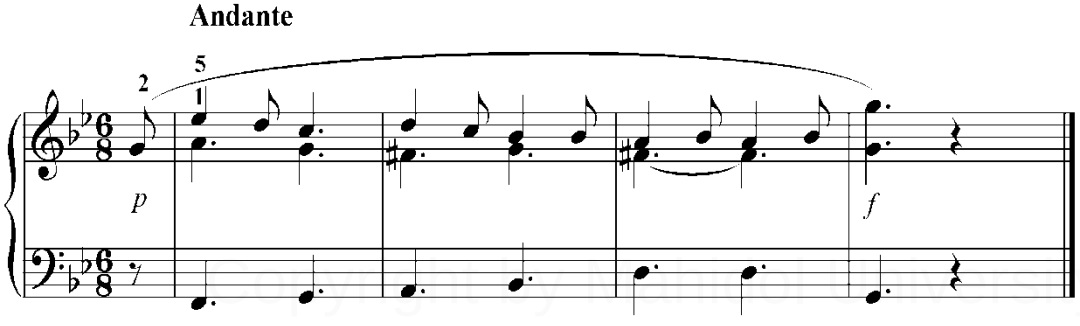

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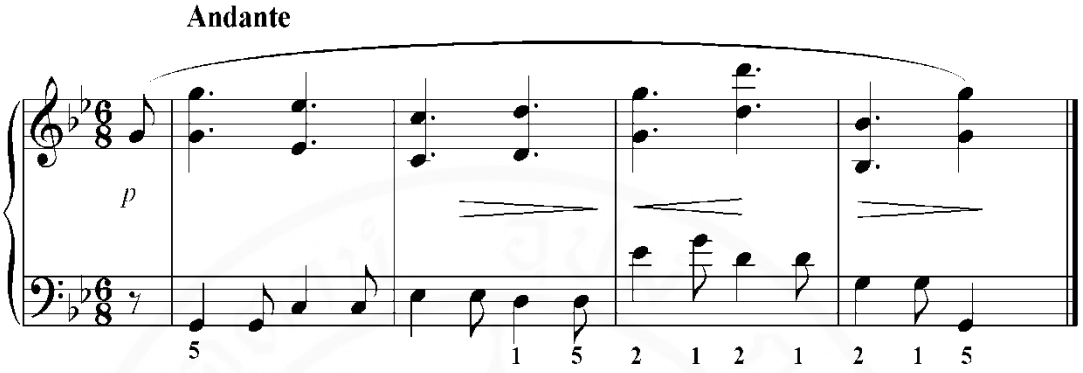

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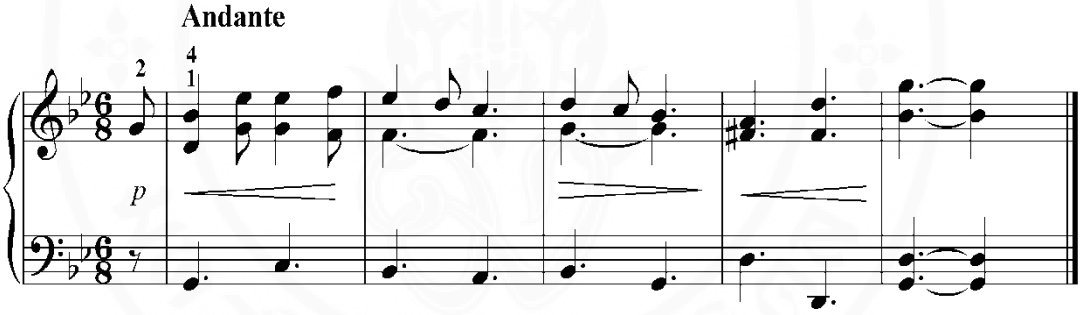

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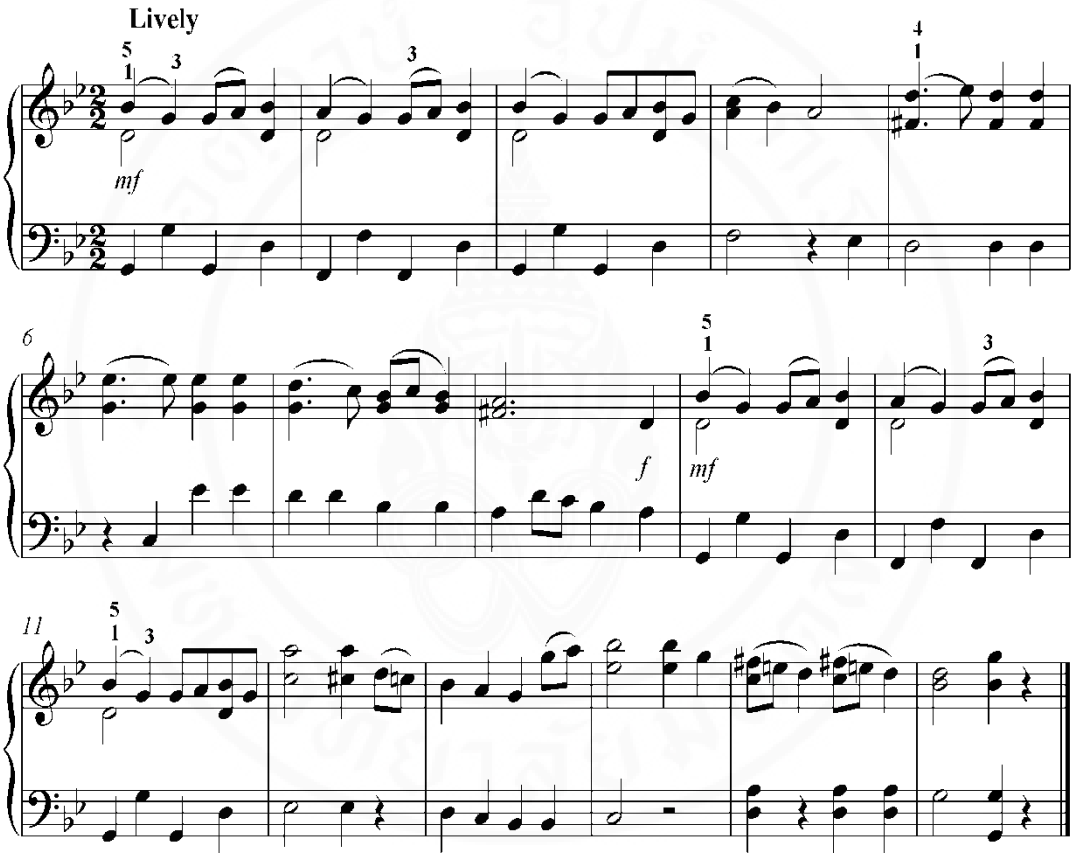
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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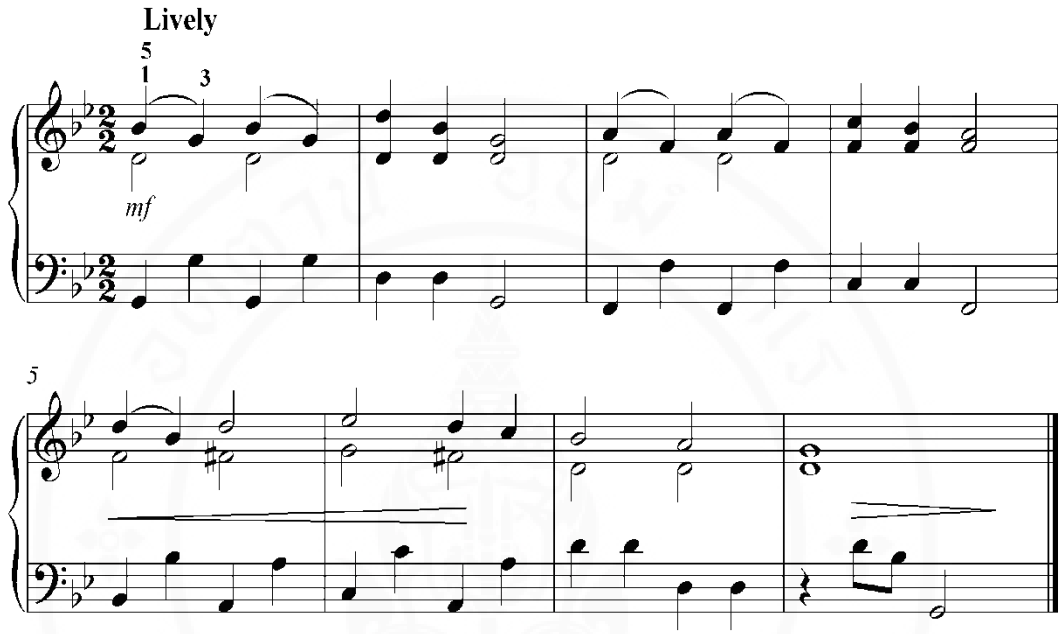
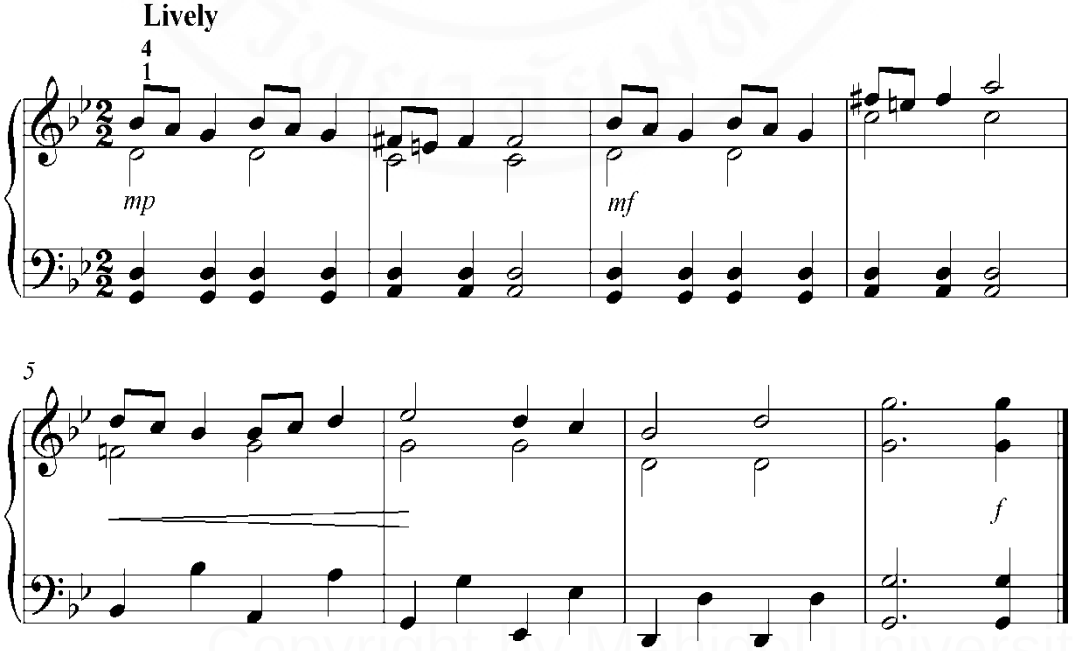
Exercises

No. 1



No. 2



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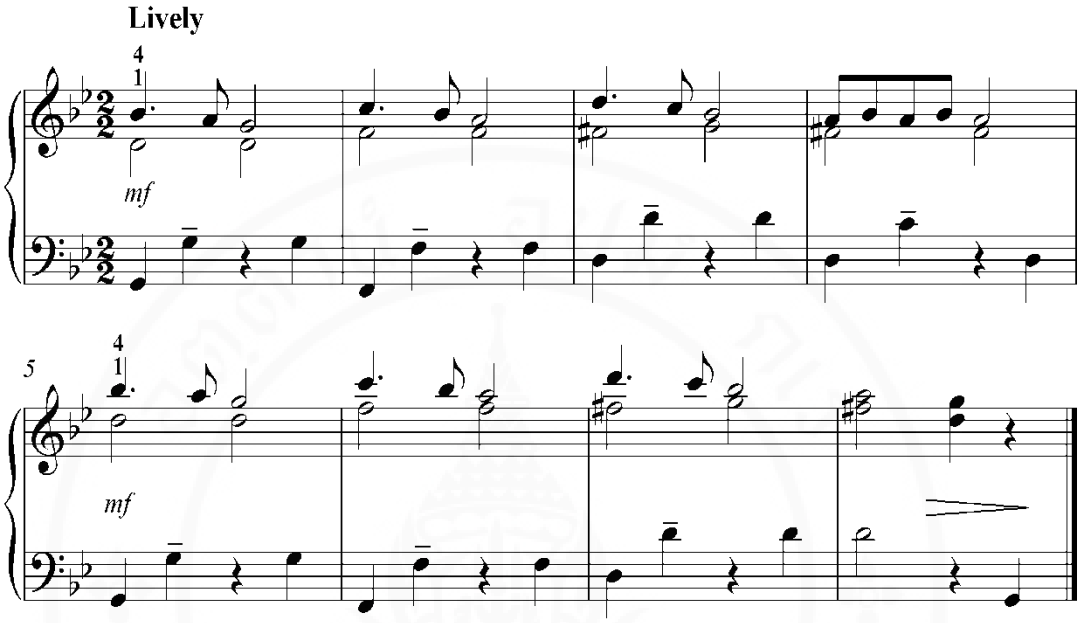
No. 3



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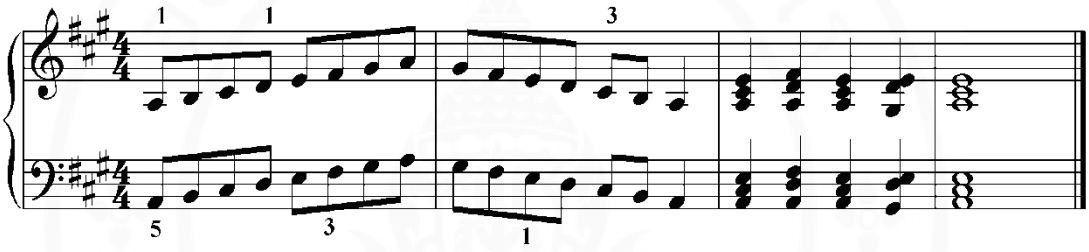
BOOK 7

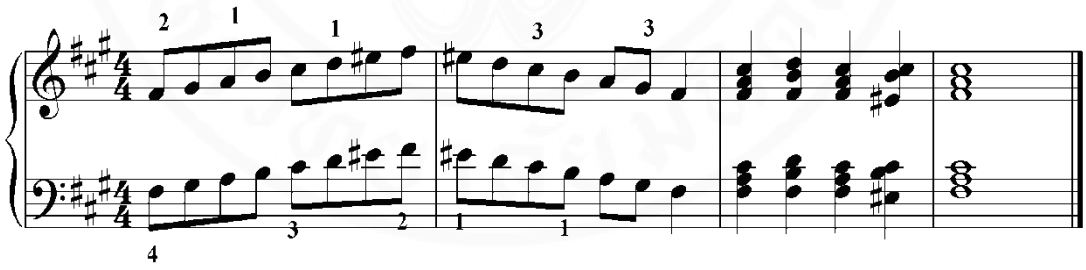
UNIT 6

Unit 6: Review of A major and F# minor

Key signature with three sharps
A major



F# harmonic minor



The secret of key specification…
When you see the piece with three sharps in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of A major and F# minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

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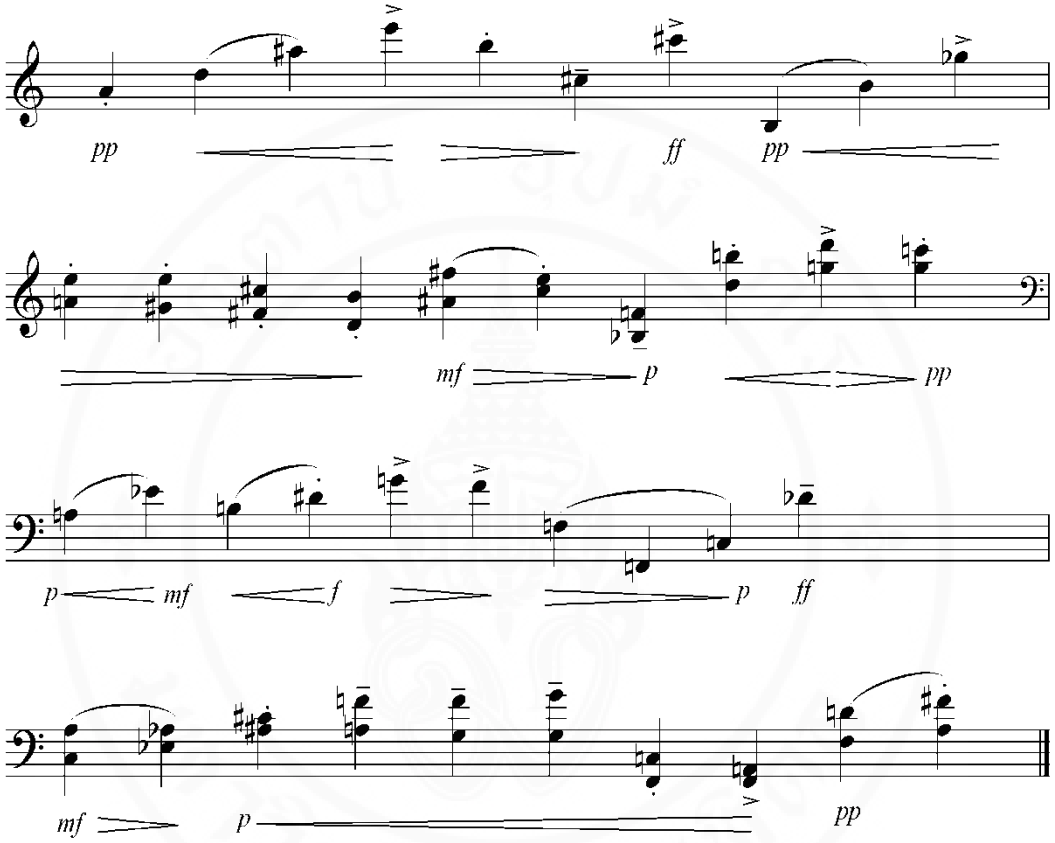
Review of pitch reading and pitch positioning with dynamic and articulation marks



** More exercises, see the supplementary book.

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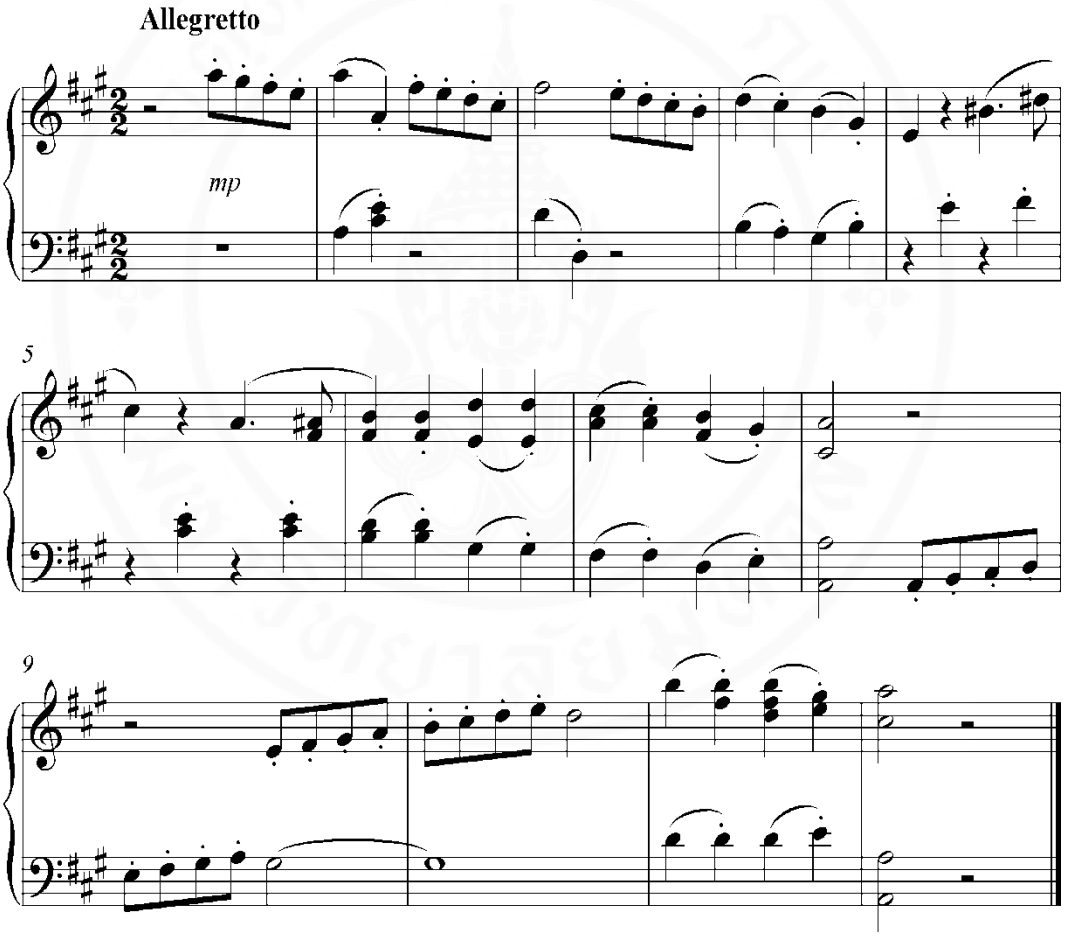
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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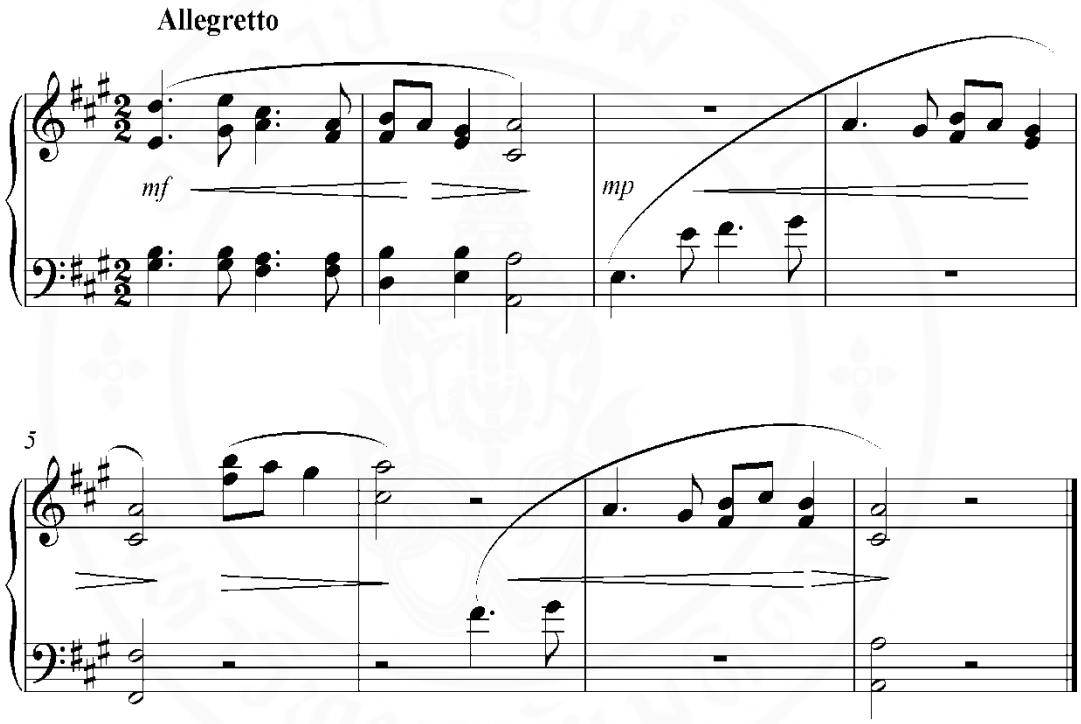
Exercises

See the blue card

No. 1



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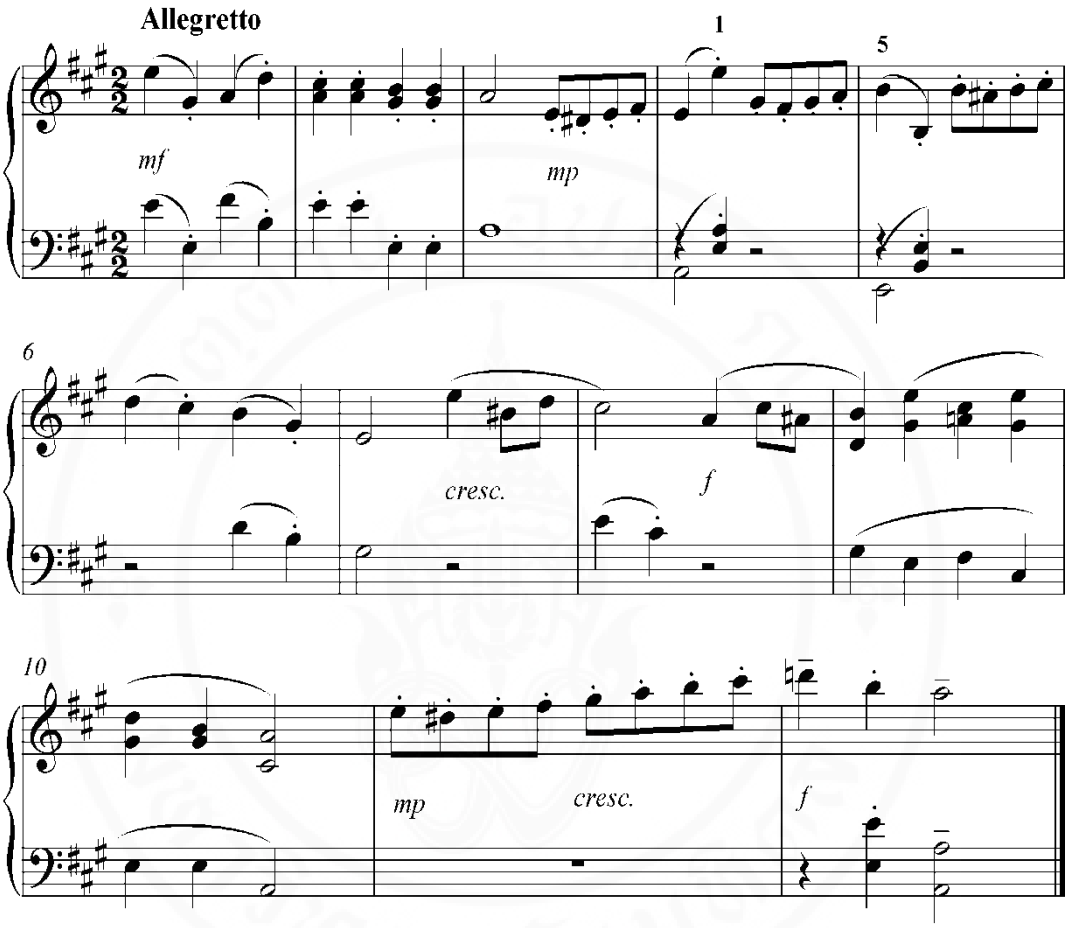
No. 2



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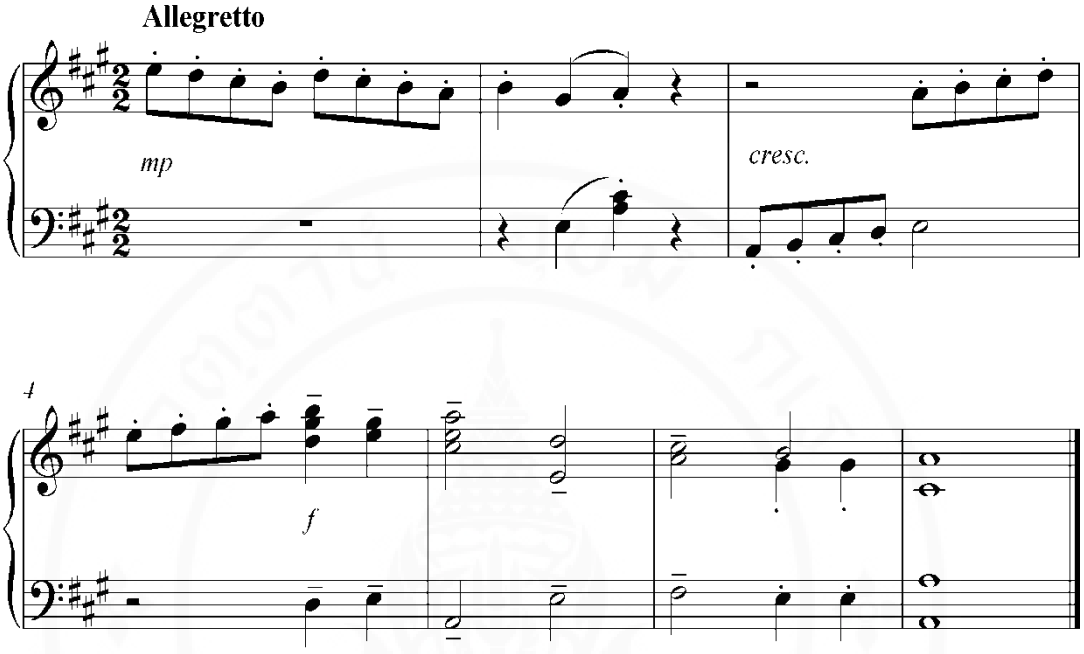
No. 3



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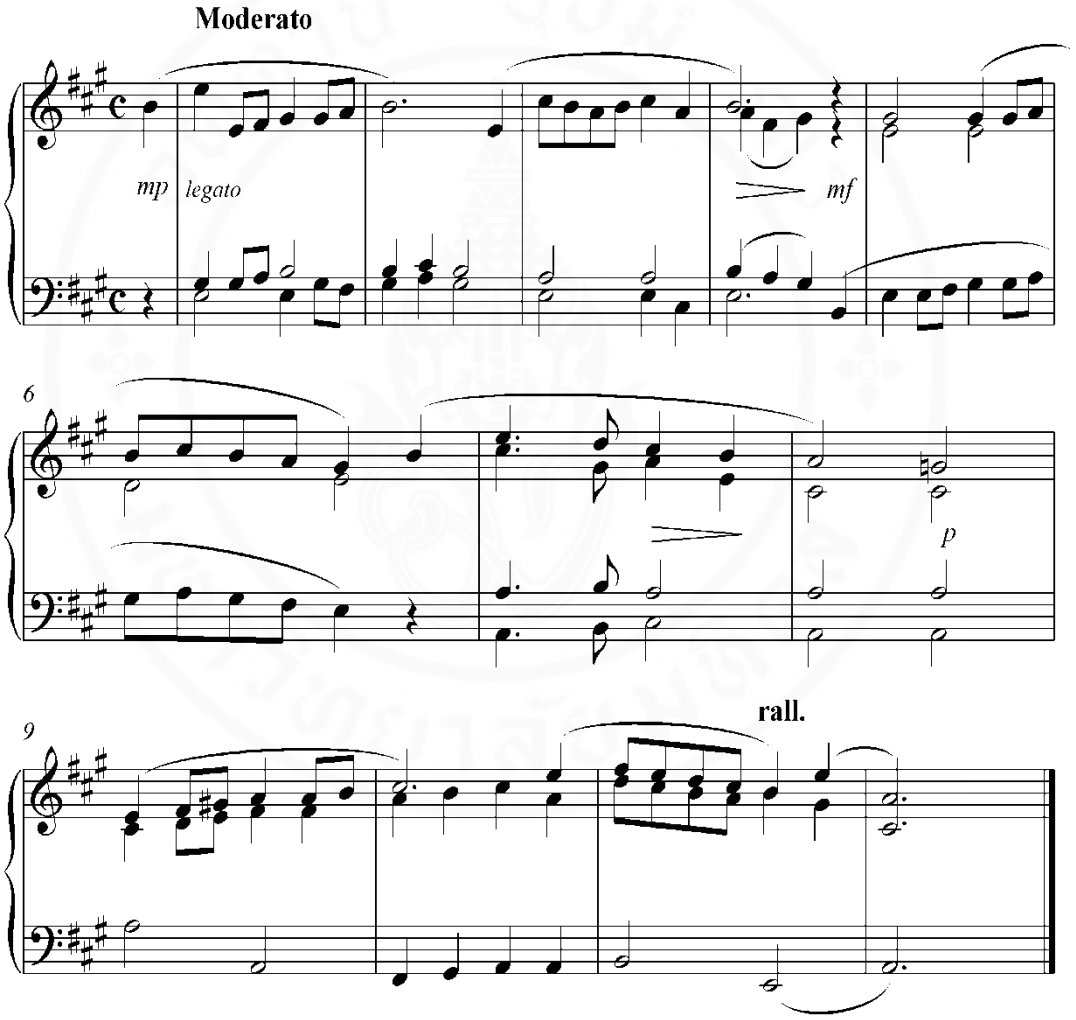
Episode 1.2

Pre-exercise/Post 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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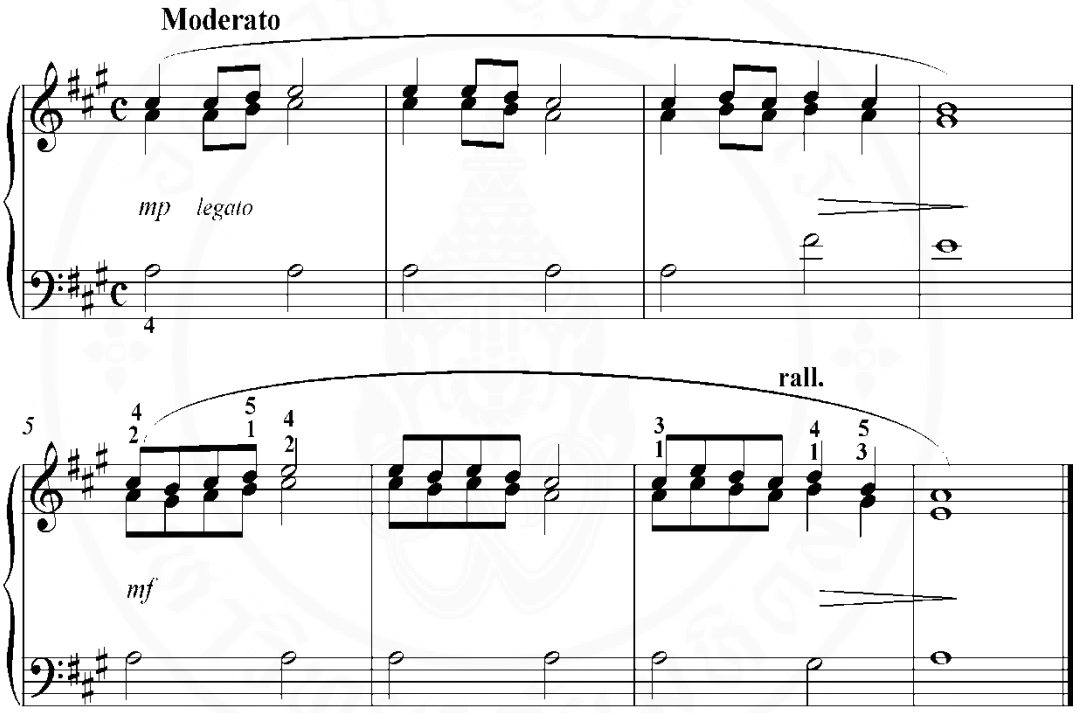
Exercises

See the blue card

No. 1



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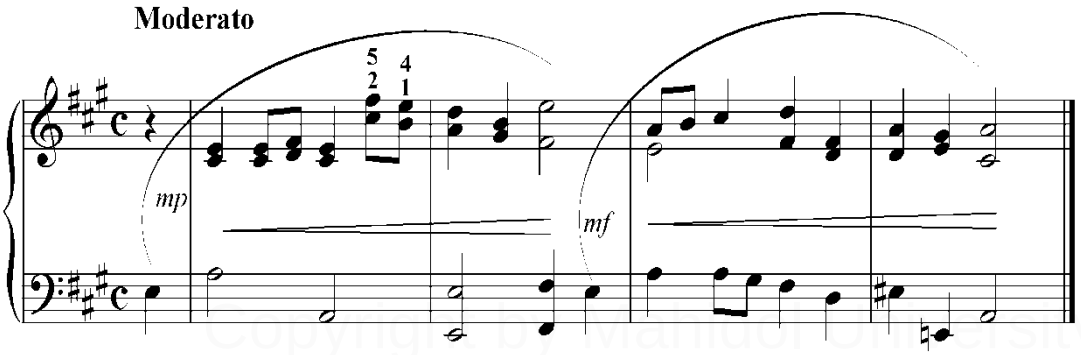

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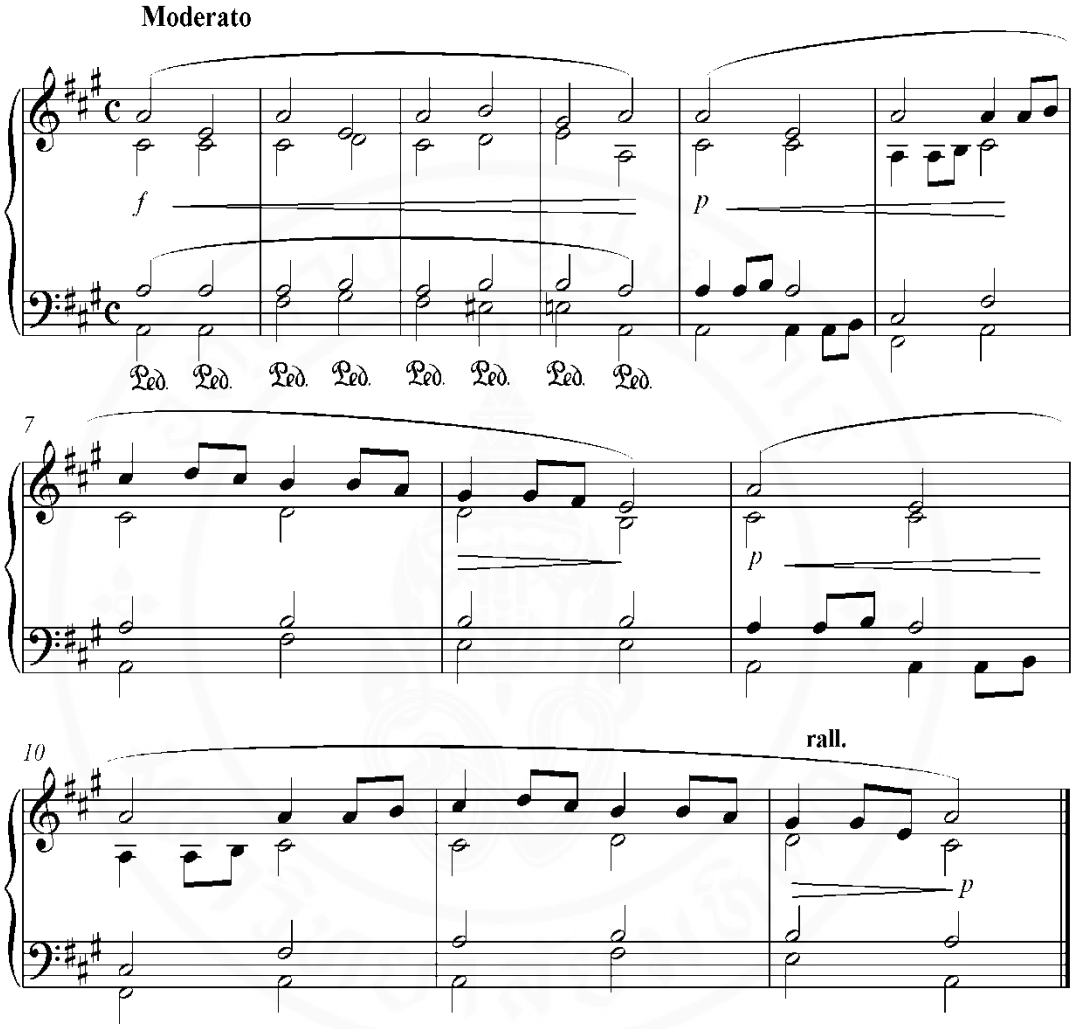

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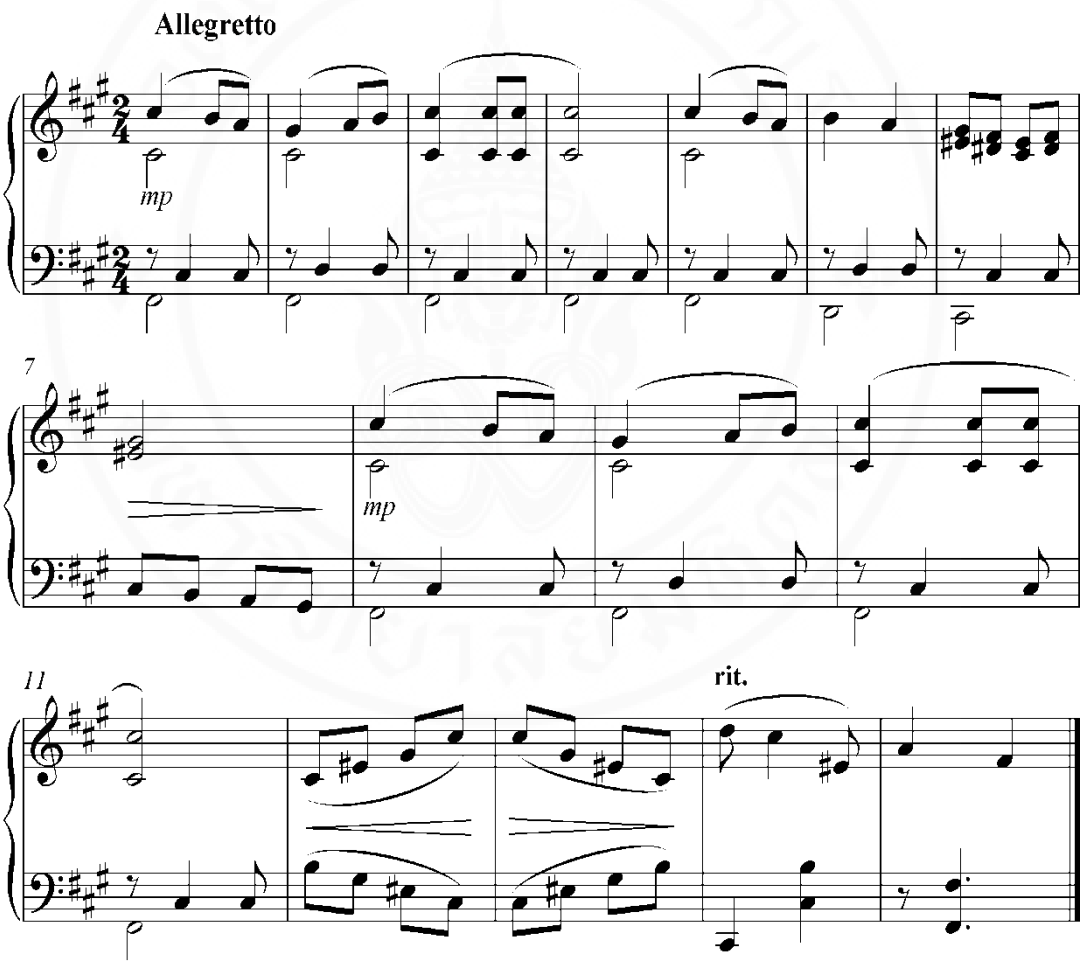
Chapter 2

Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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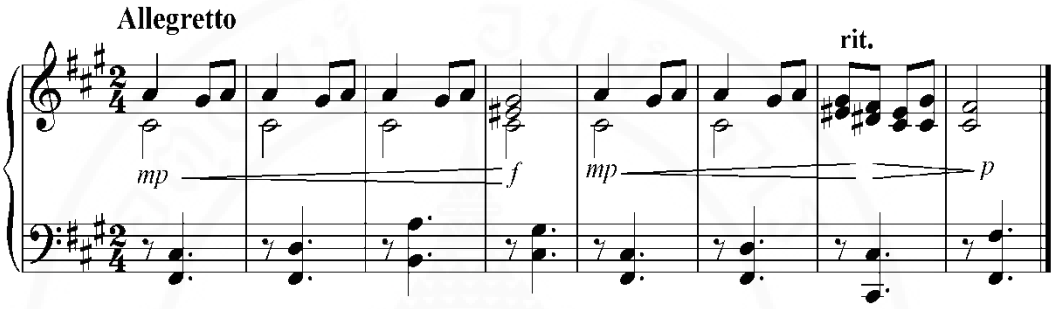
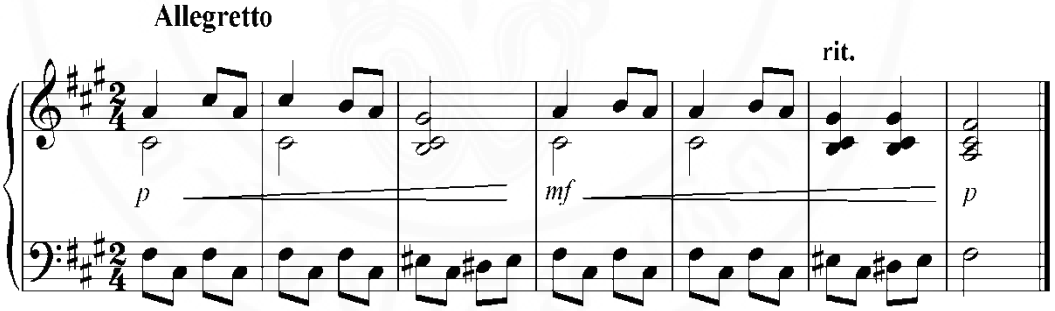
Exercises

See the blue card

No. 1



No. 2



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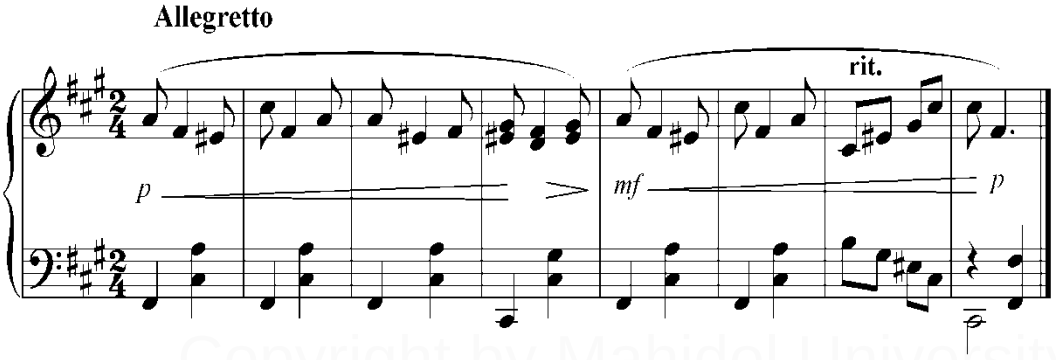

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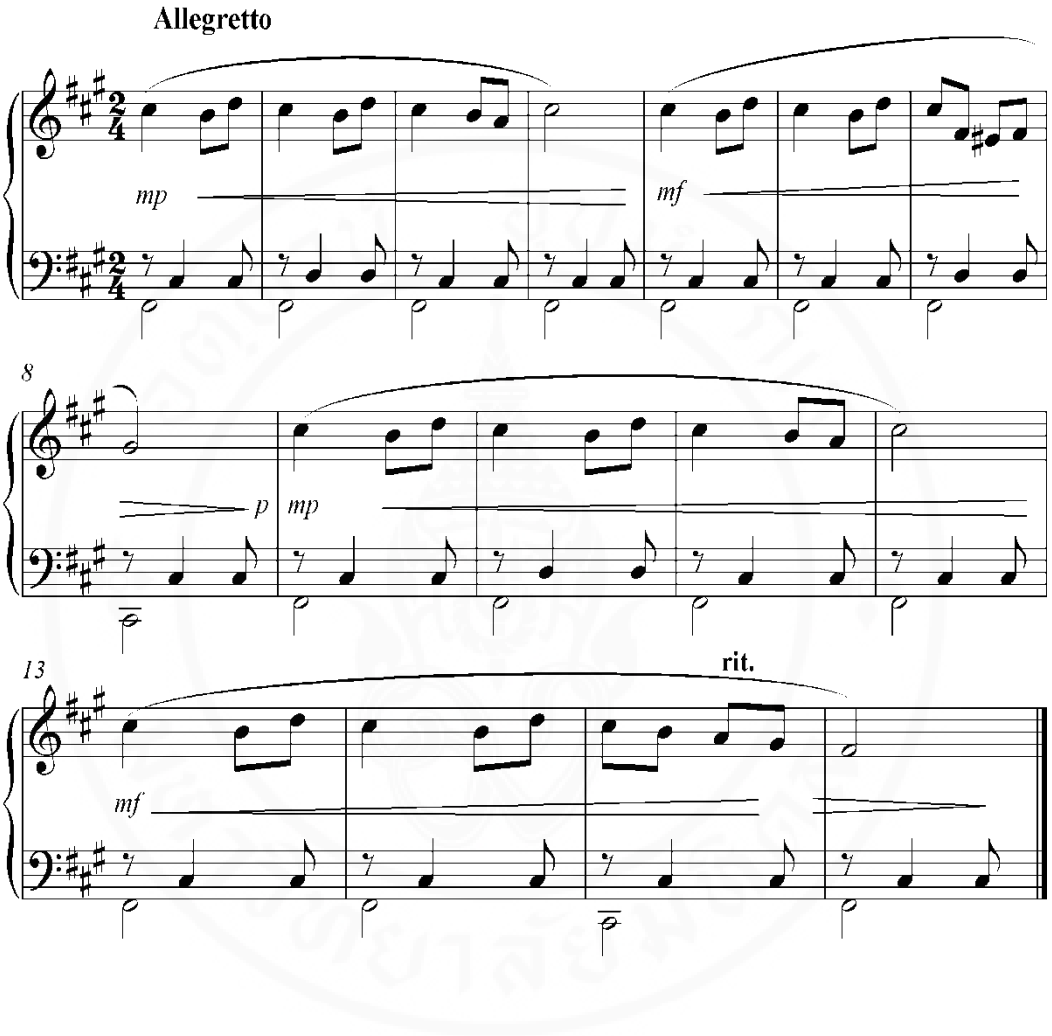
No. 4



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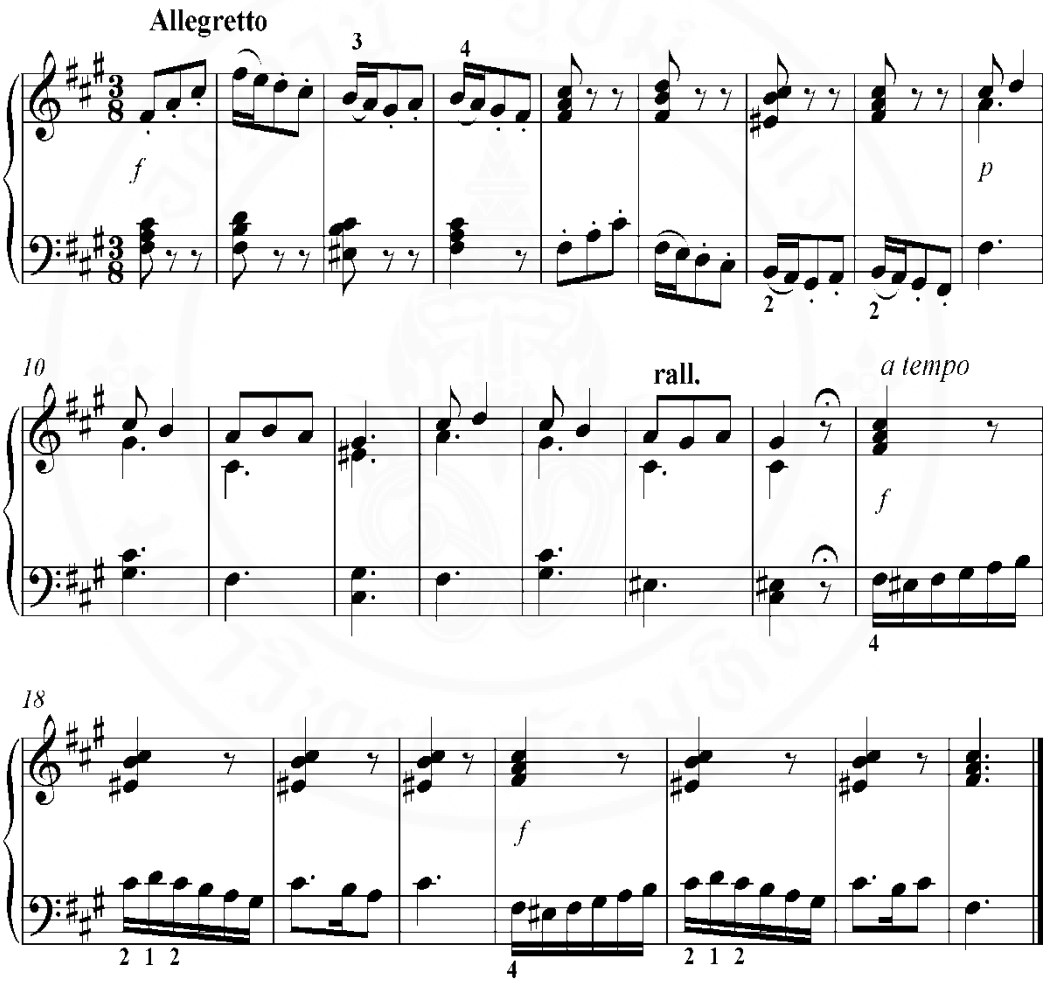
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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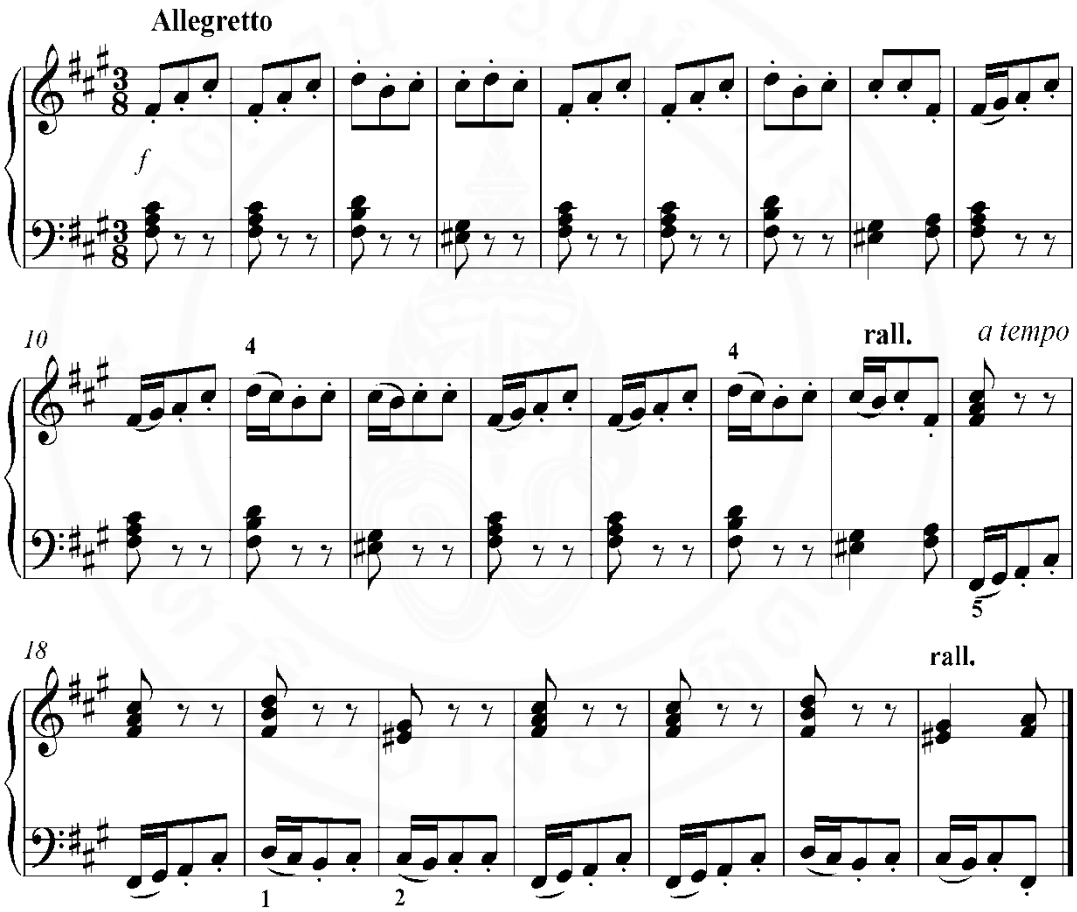
Exercises

See the blue card

No. 1



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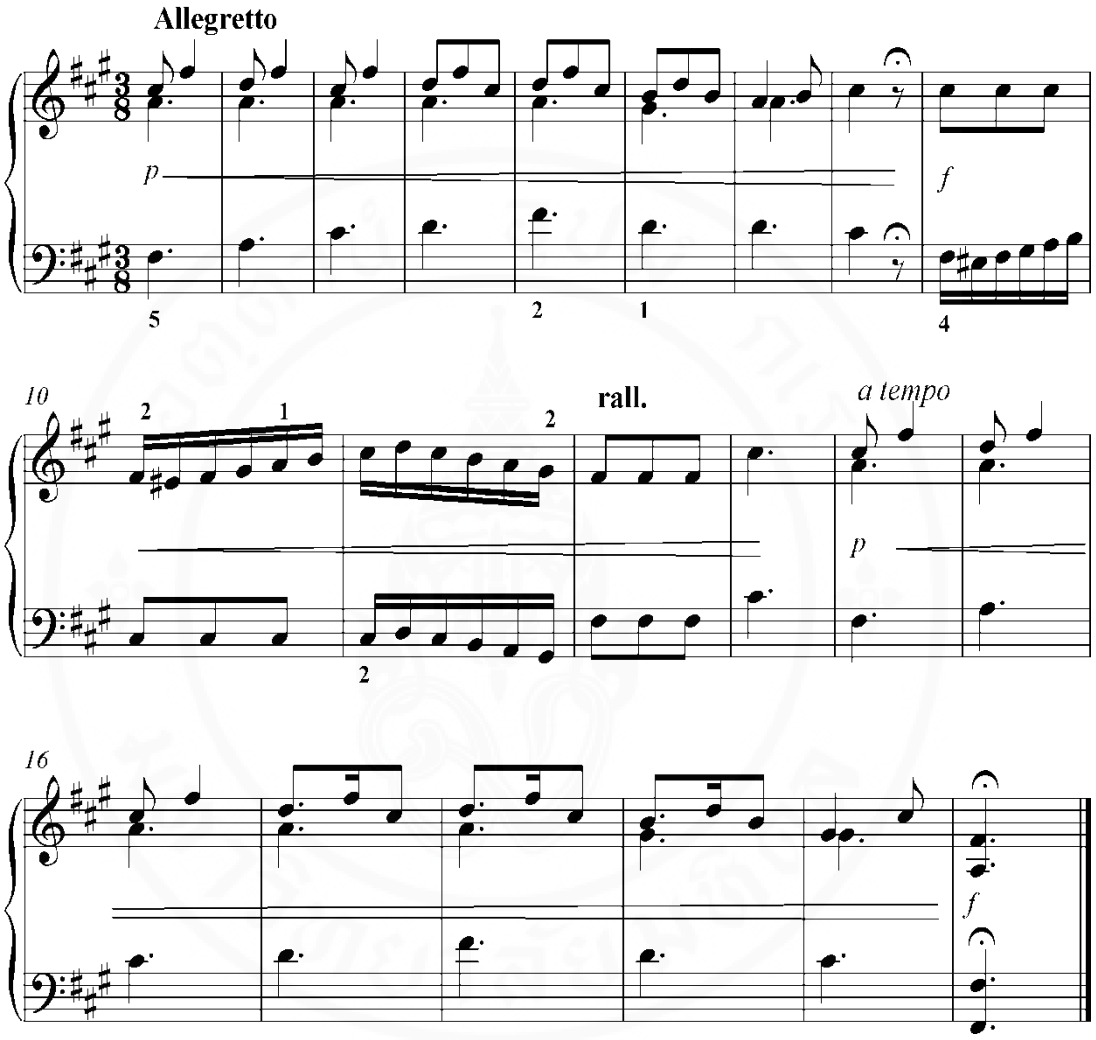

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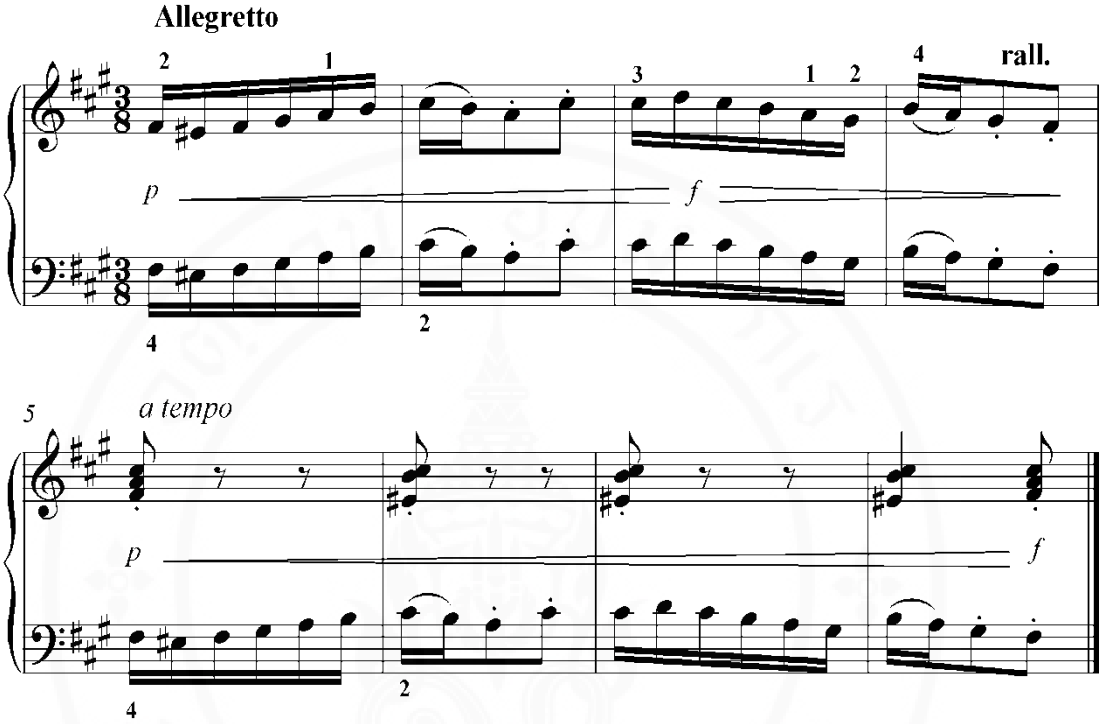

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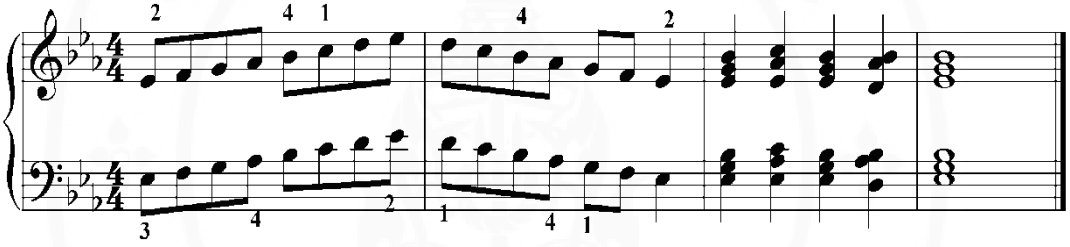
BOOK 8

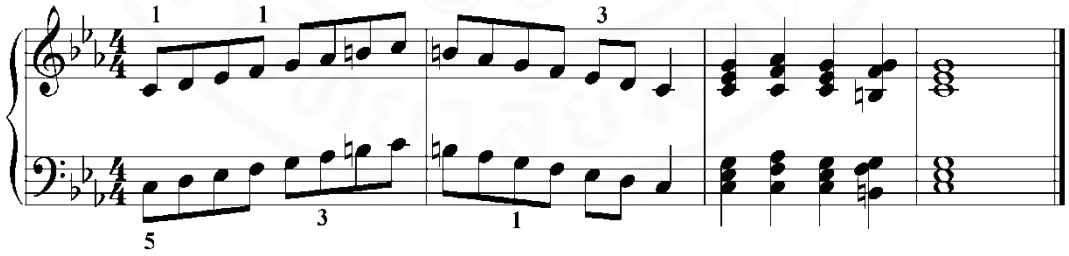
UNIT 7

Unit 7: Review of Eb major and C minor

Key signature with three flats
Eb major



C harmonic minor



The secret of key specification…
When you see the piece with three flats in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of Eb major and C minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

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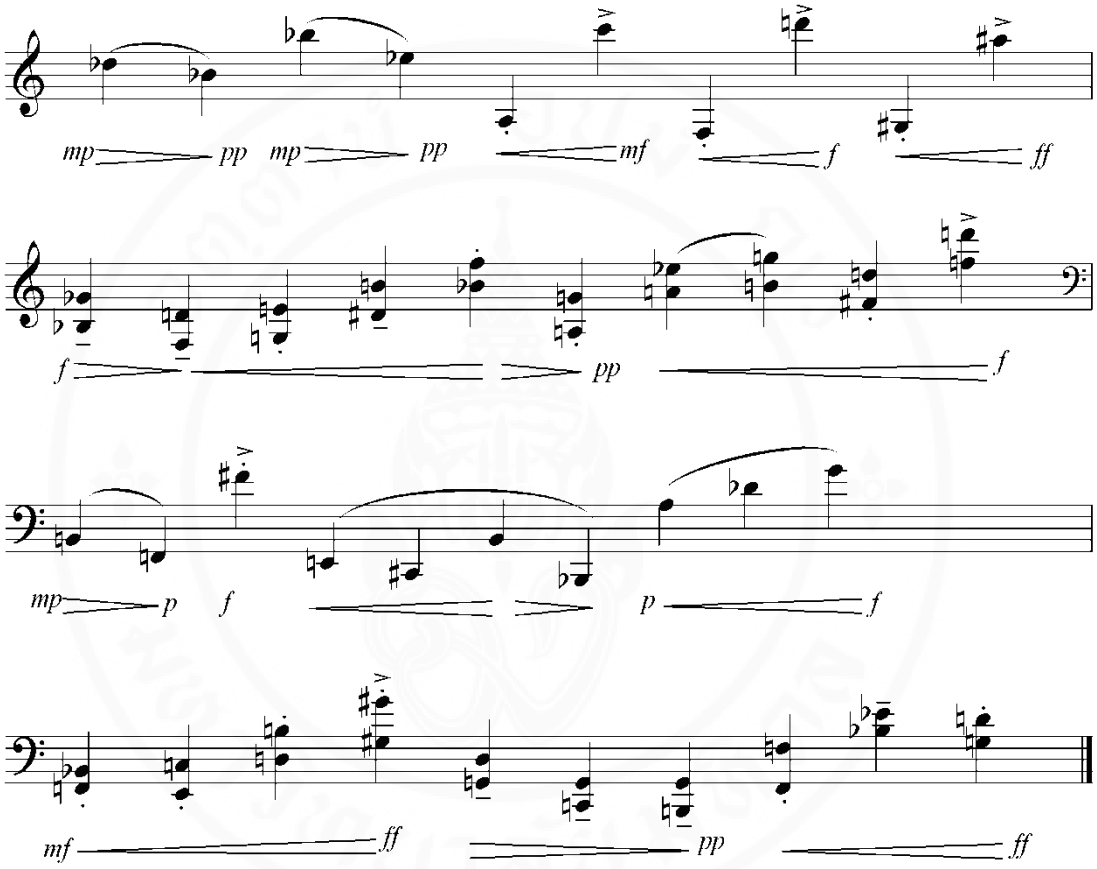
Review of pitch reading and pitch positioning with dynamic and articulation marks



** More exercises, see the supplementary book.

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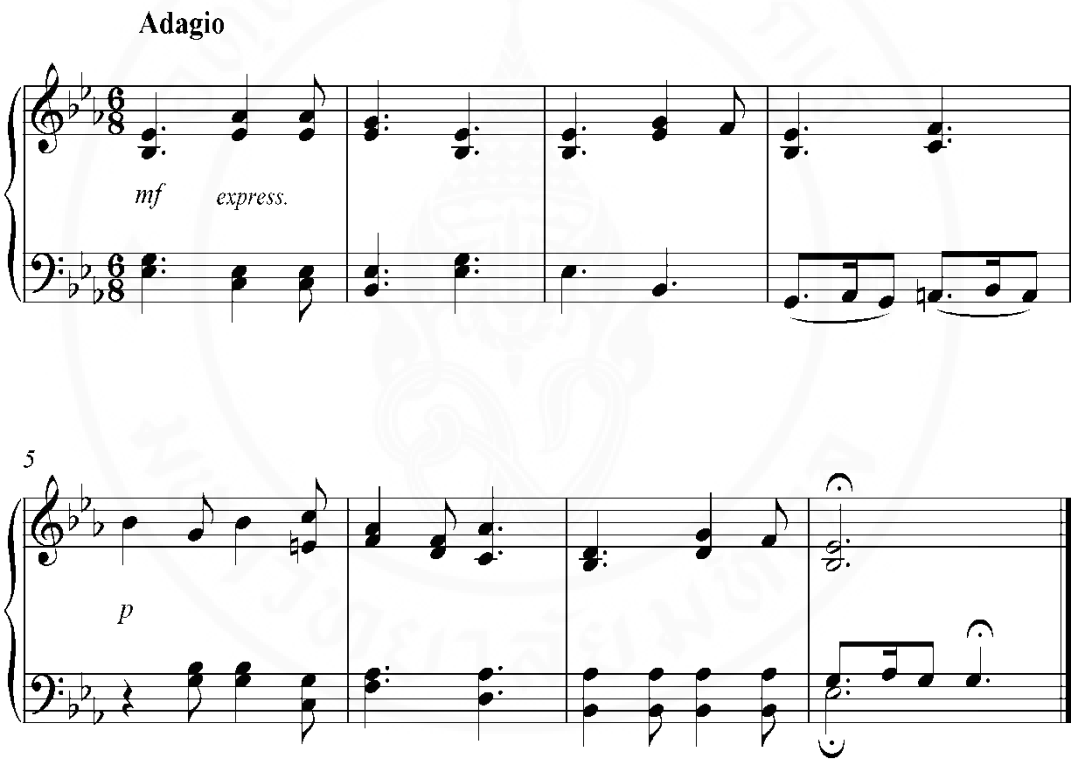
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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Exercises

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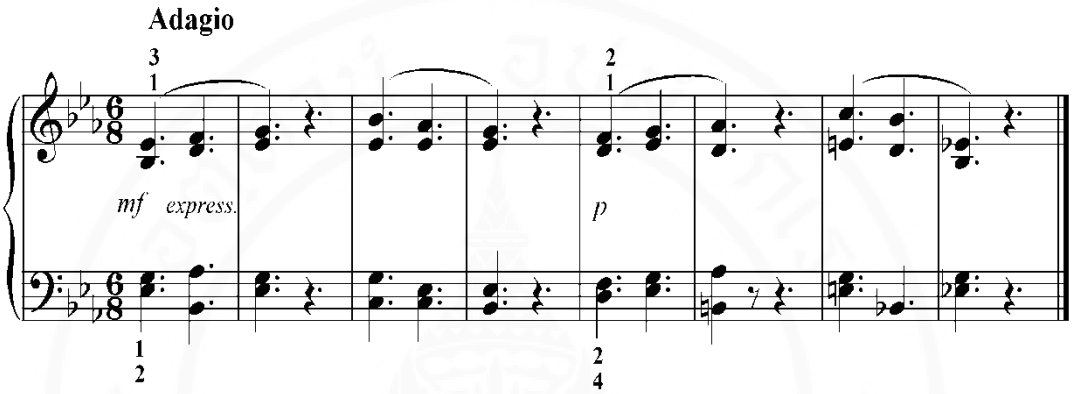
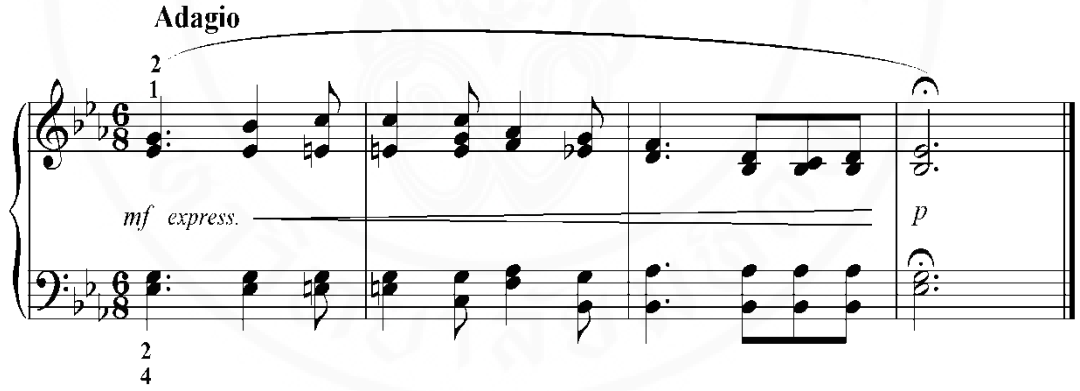
No. 1



No. 2



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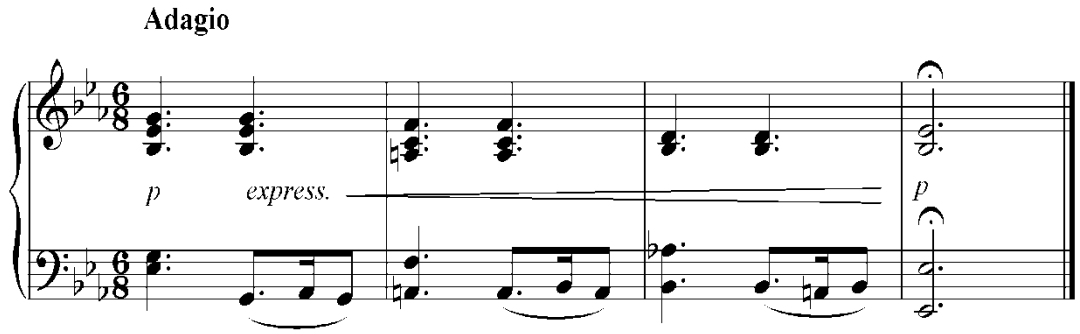

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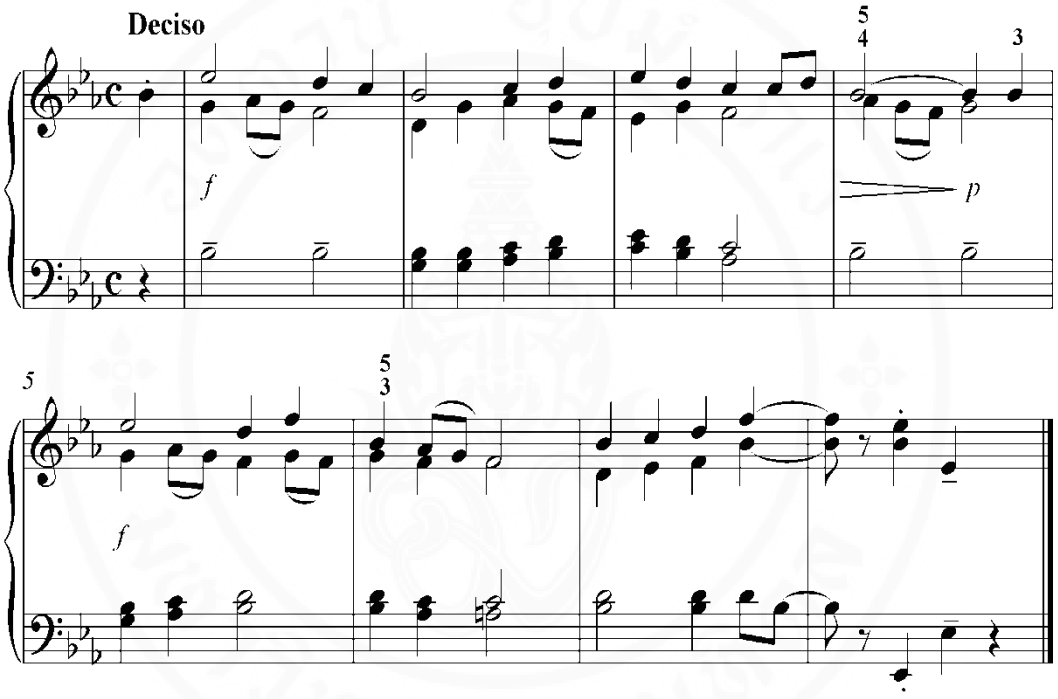
Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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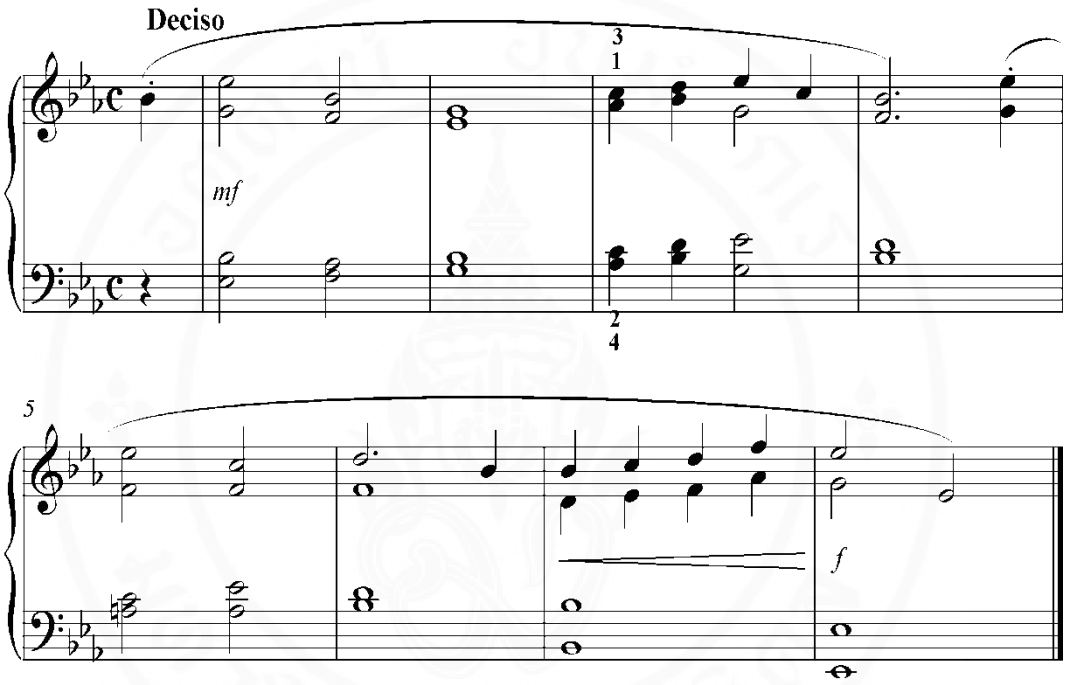
Exercises

See the blue card

No. 1



Deciso means decisively.

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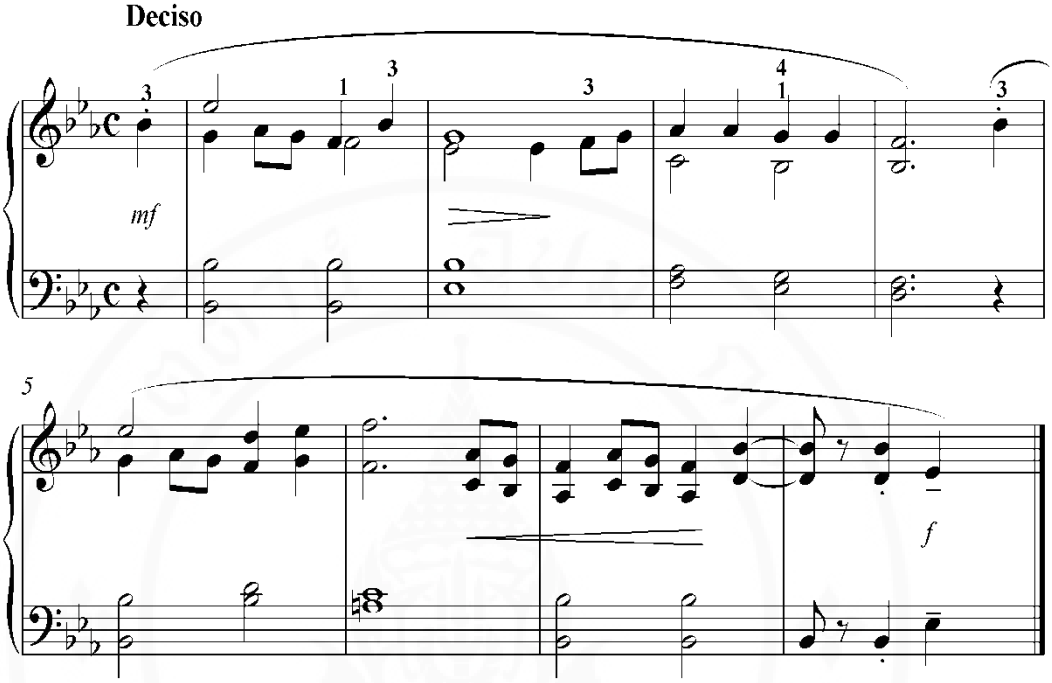
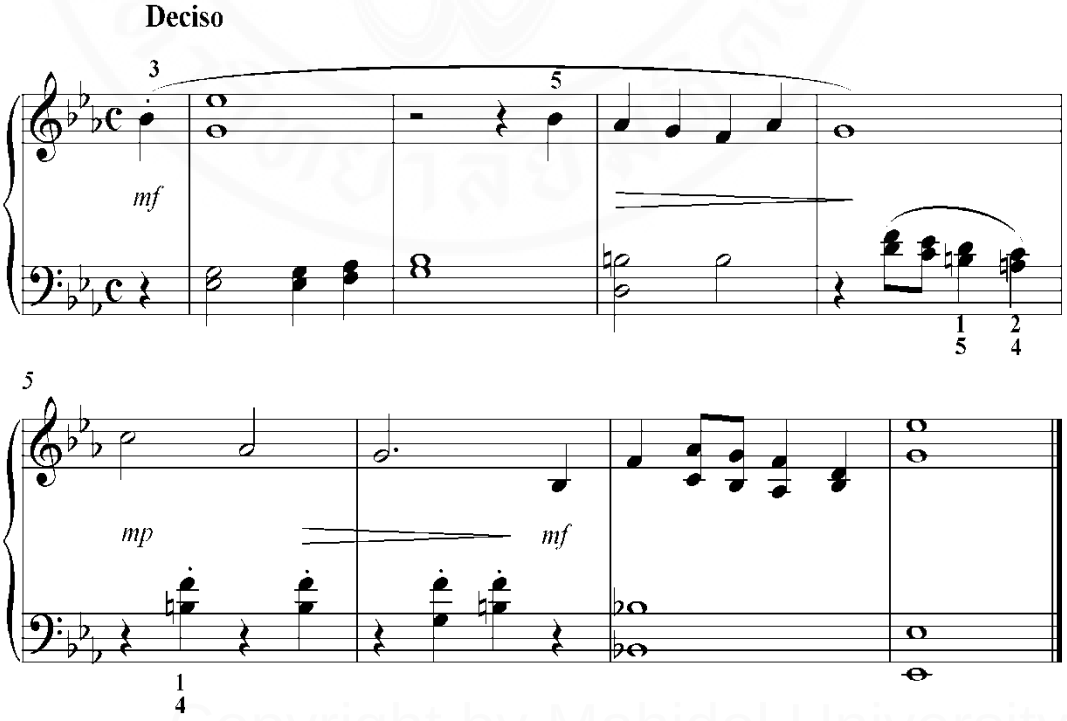
No. 2



No. 3



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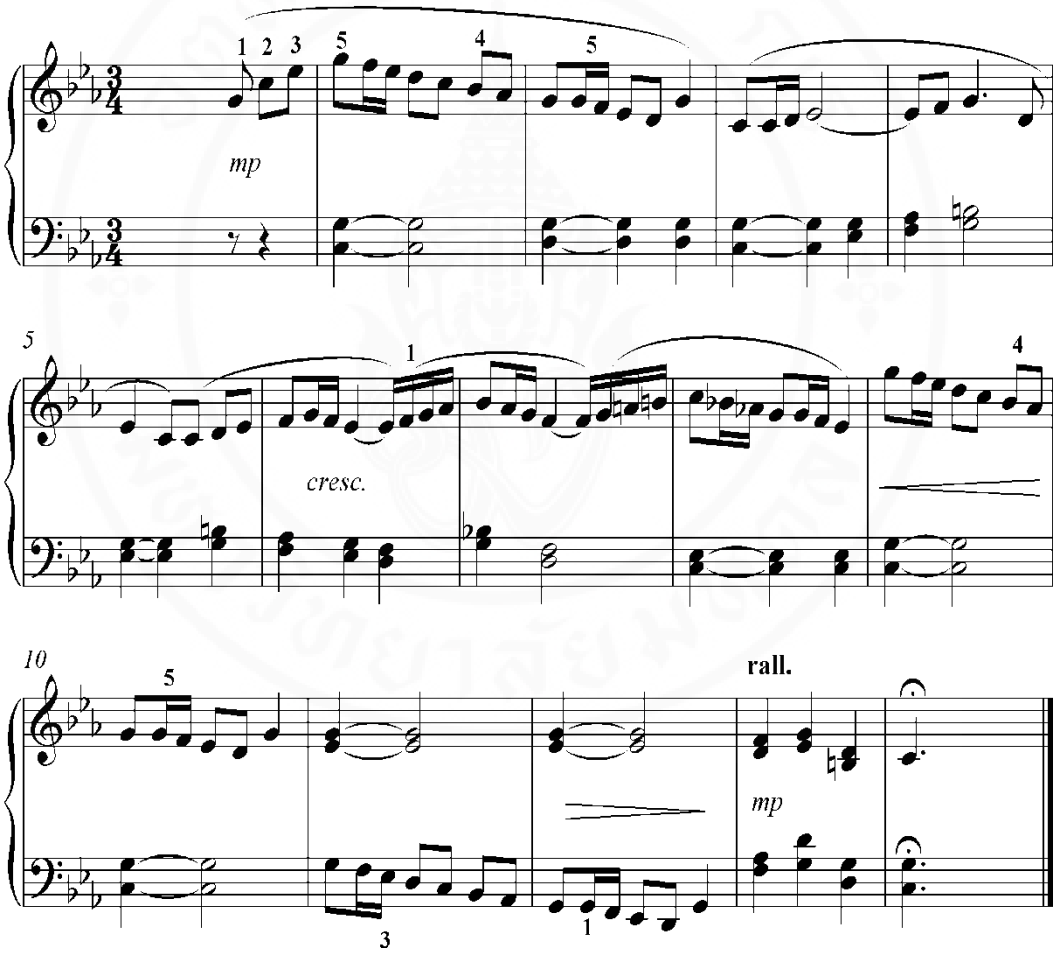
Chapter 2

Episode 2.1

Pre/Post-exercise 2.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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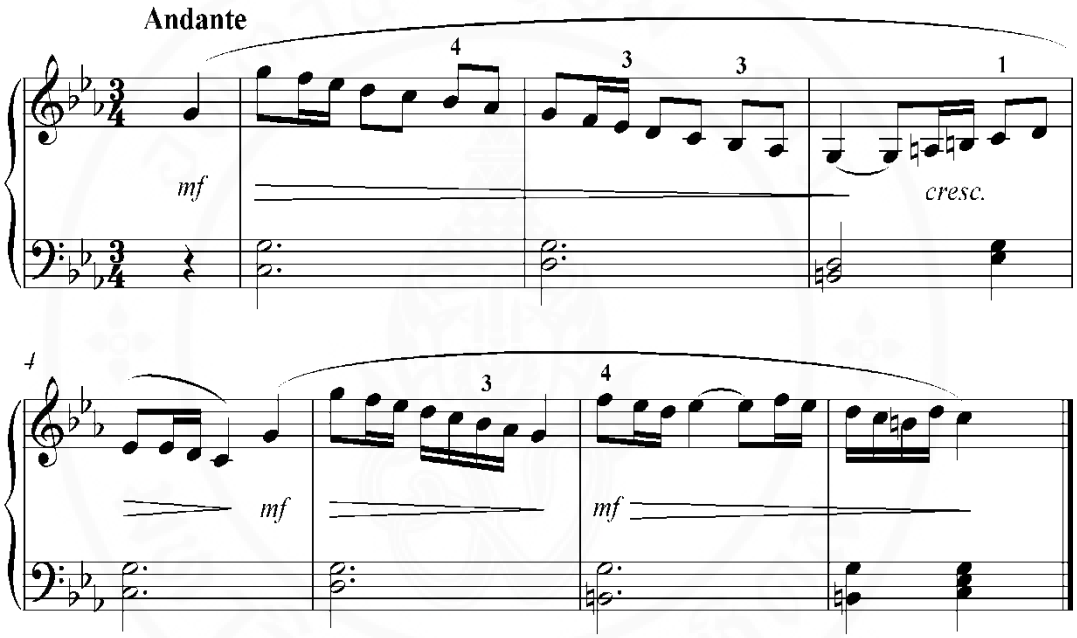
Exercises

See the blue card

No.1



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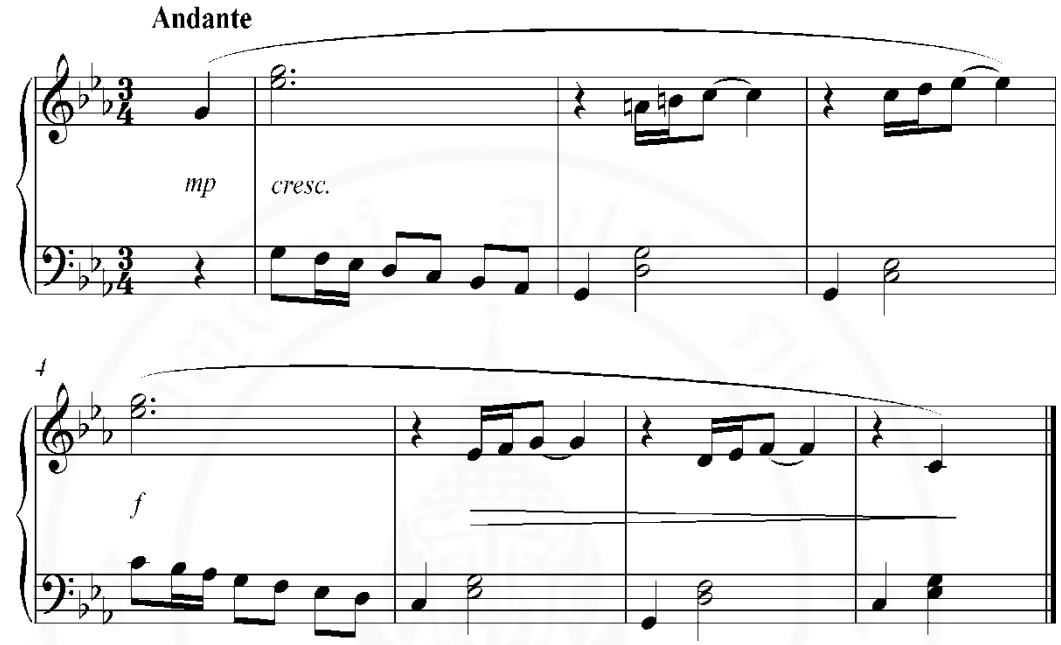
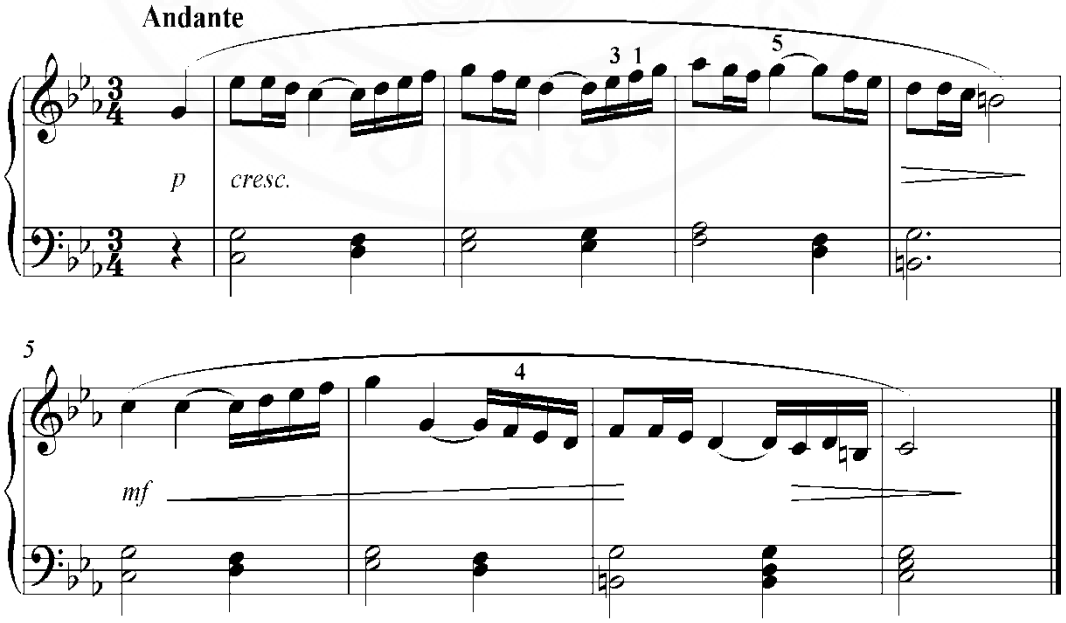
No. 2



No. 3



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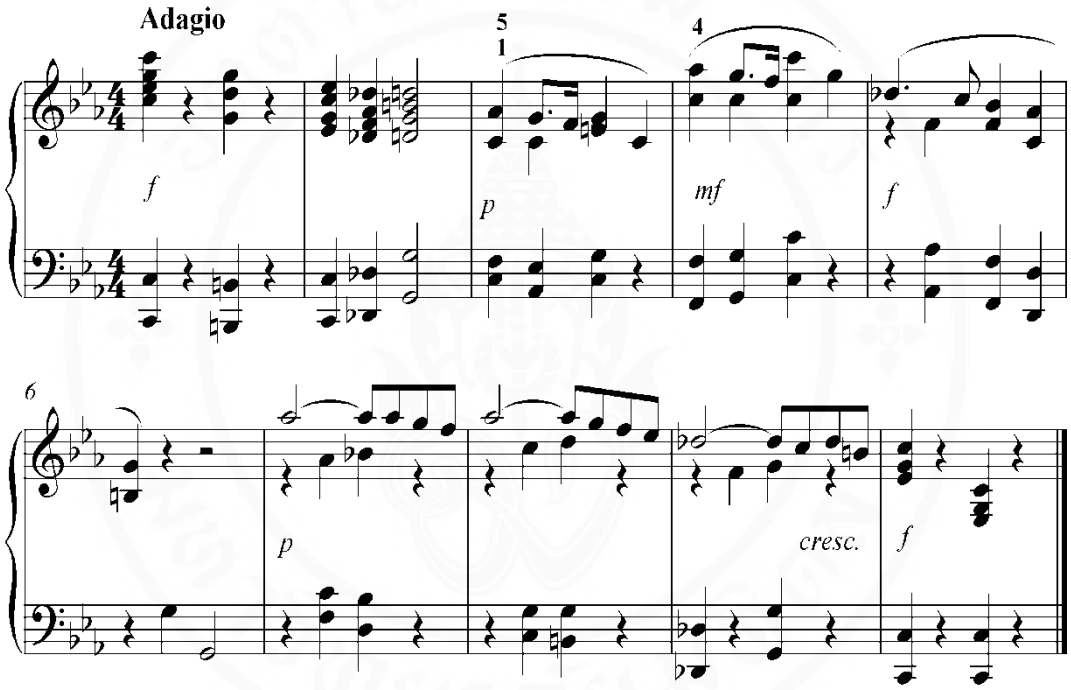
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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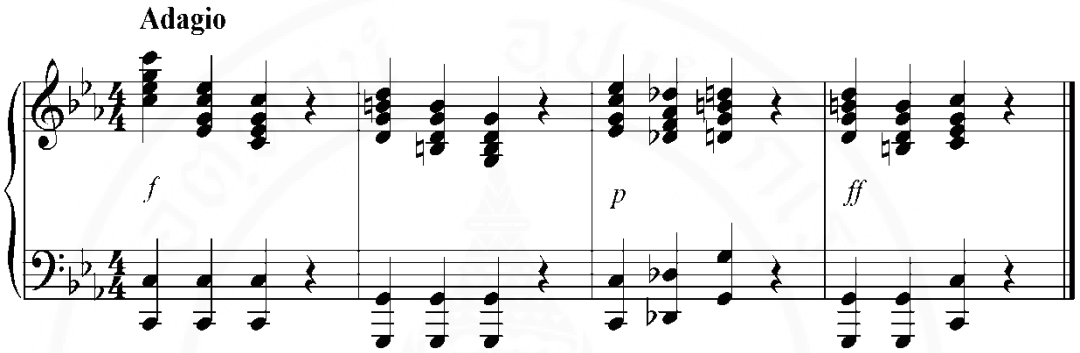
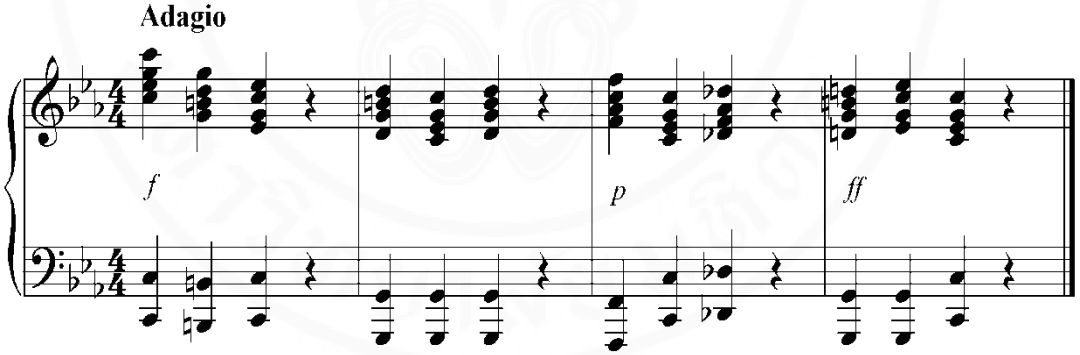
Exercises

See the blue card

No. 1



No. 2



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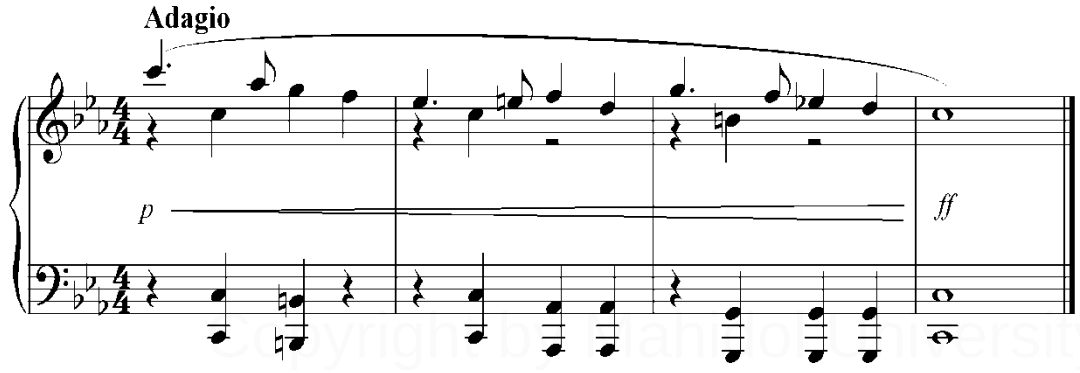

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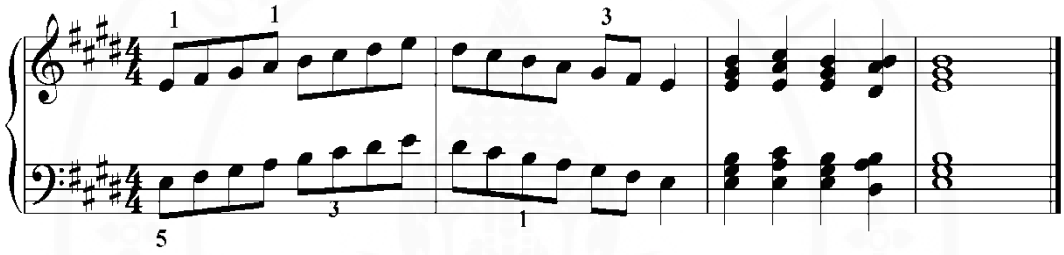
BOOK 9

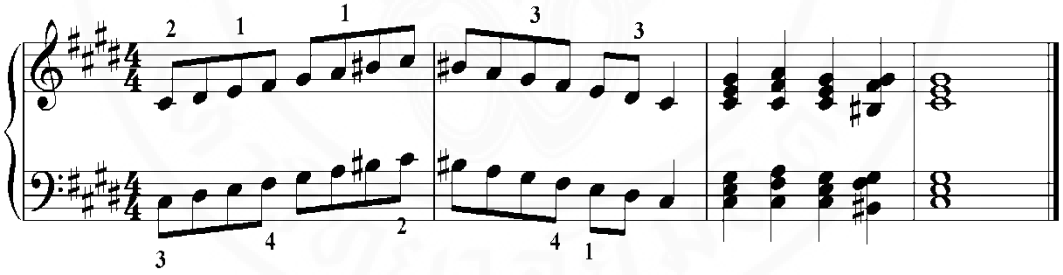
UNIT 8

Unit 8: Review of E major and C# minor

Key signature with four sharps
E major



C# harmonic minor



The secret of key specification…
When you see the piece with four sharps in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of E major and C# minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

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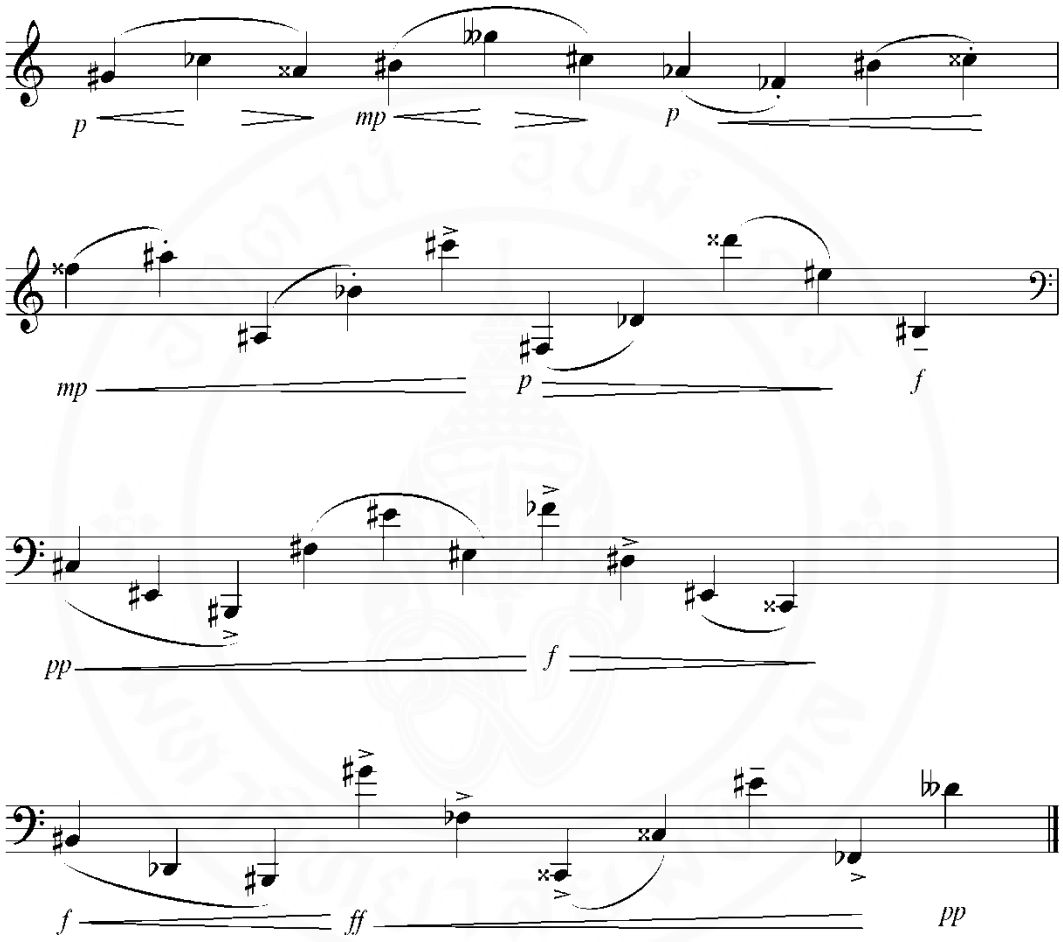
Review of pitch reading and pitch positioning with dynamic and articulation marks



** More exercises, see the supplementary book.

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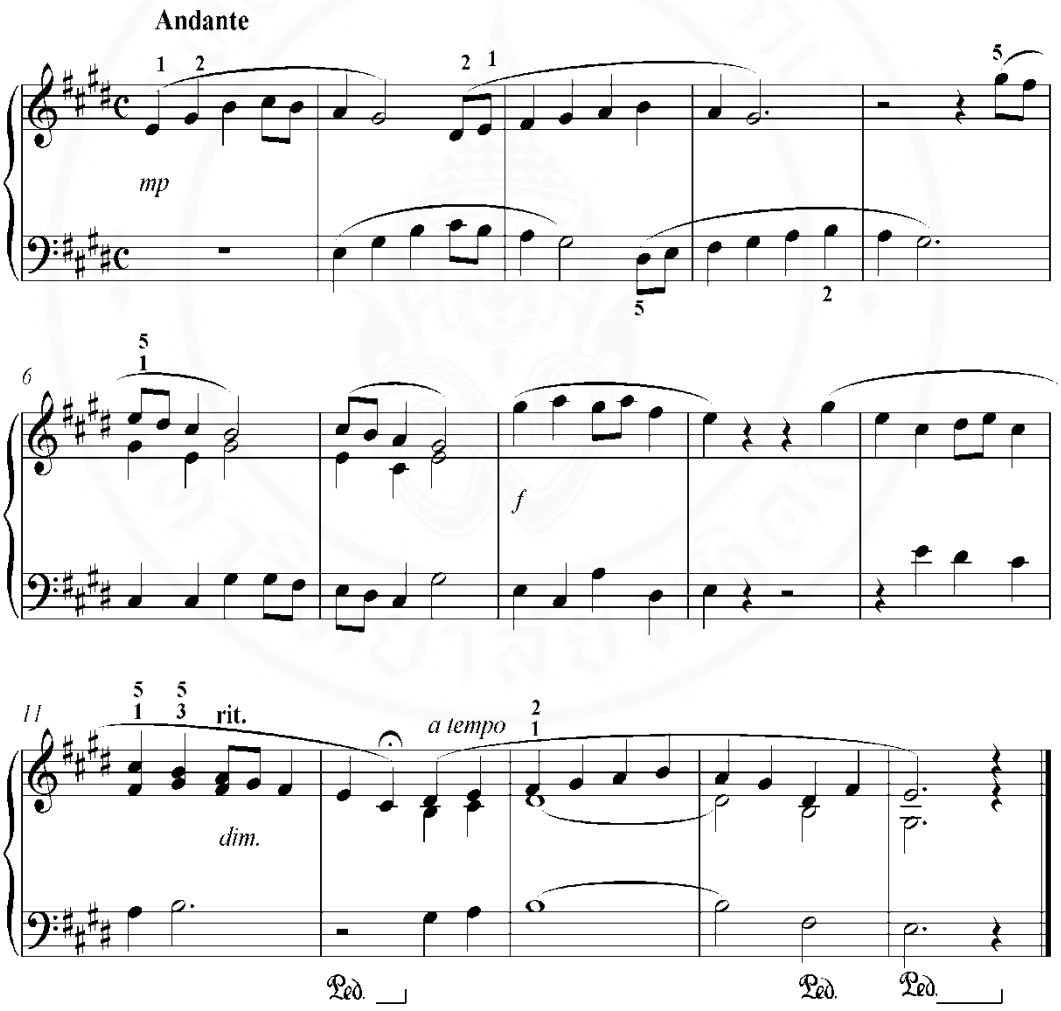
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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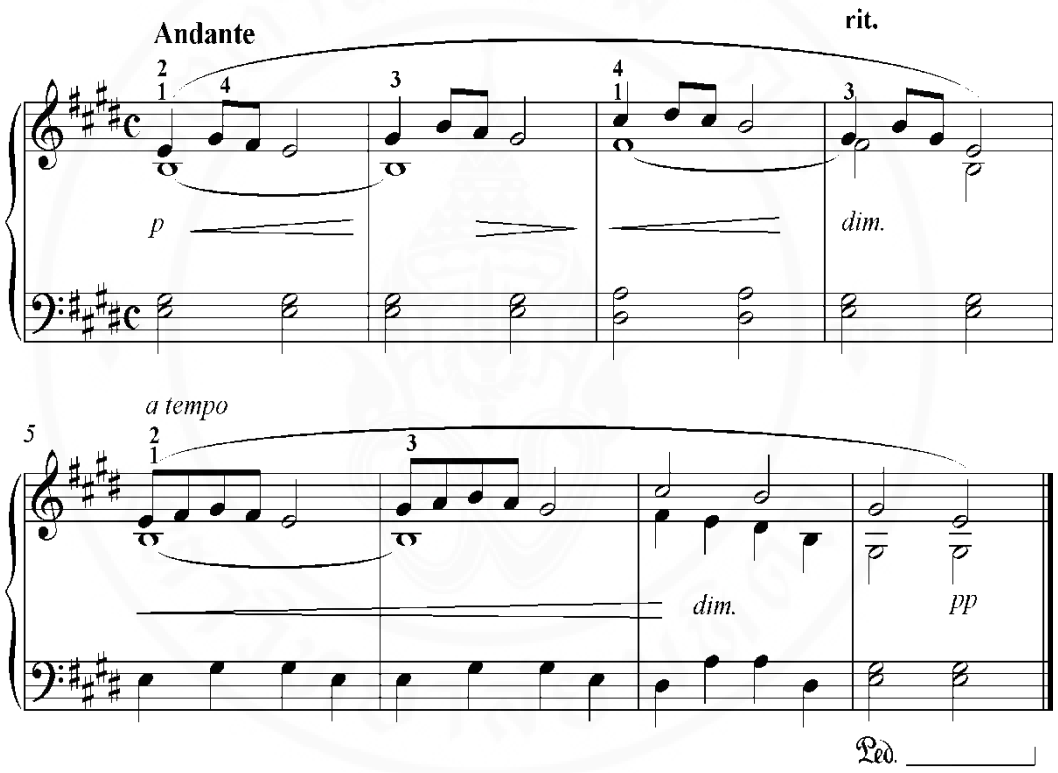
Exercise

See the blue card

No. 1



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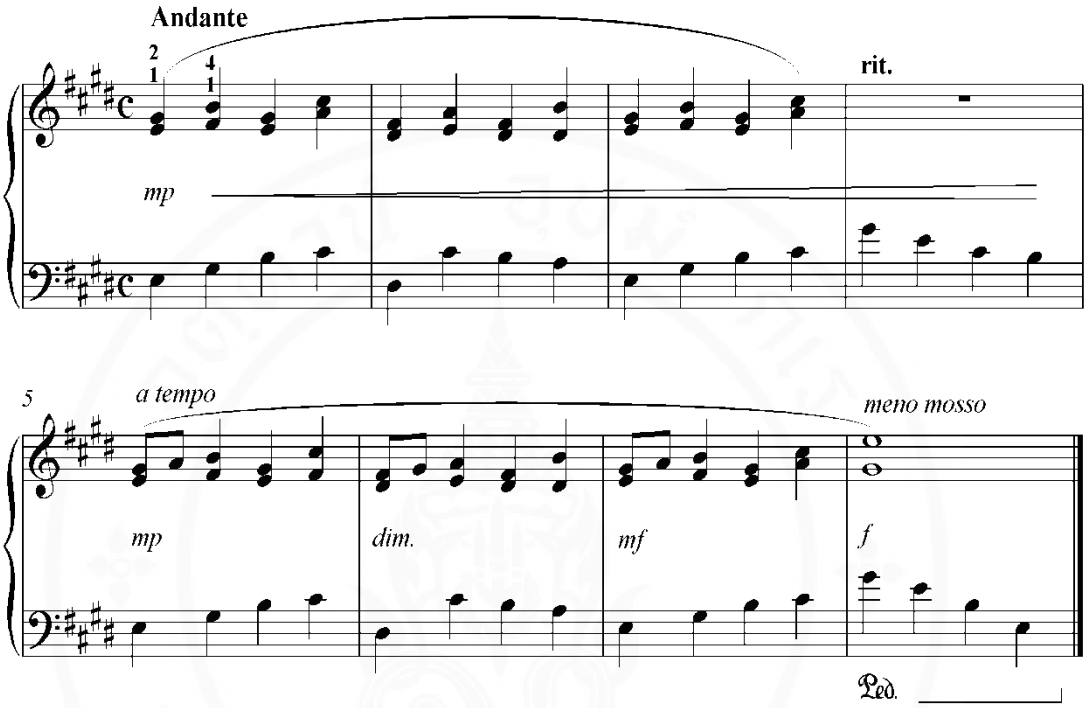
No. 2



meno mosso means slower.

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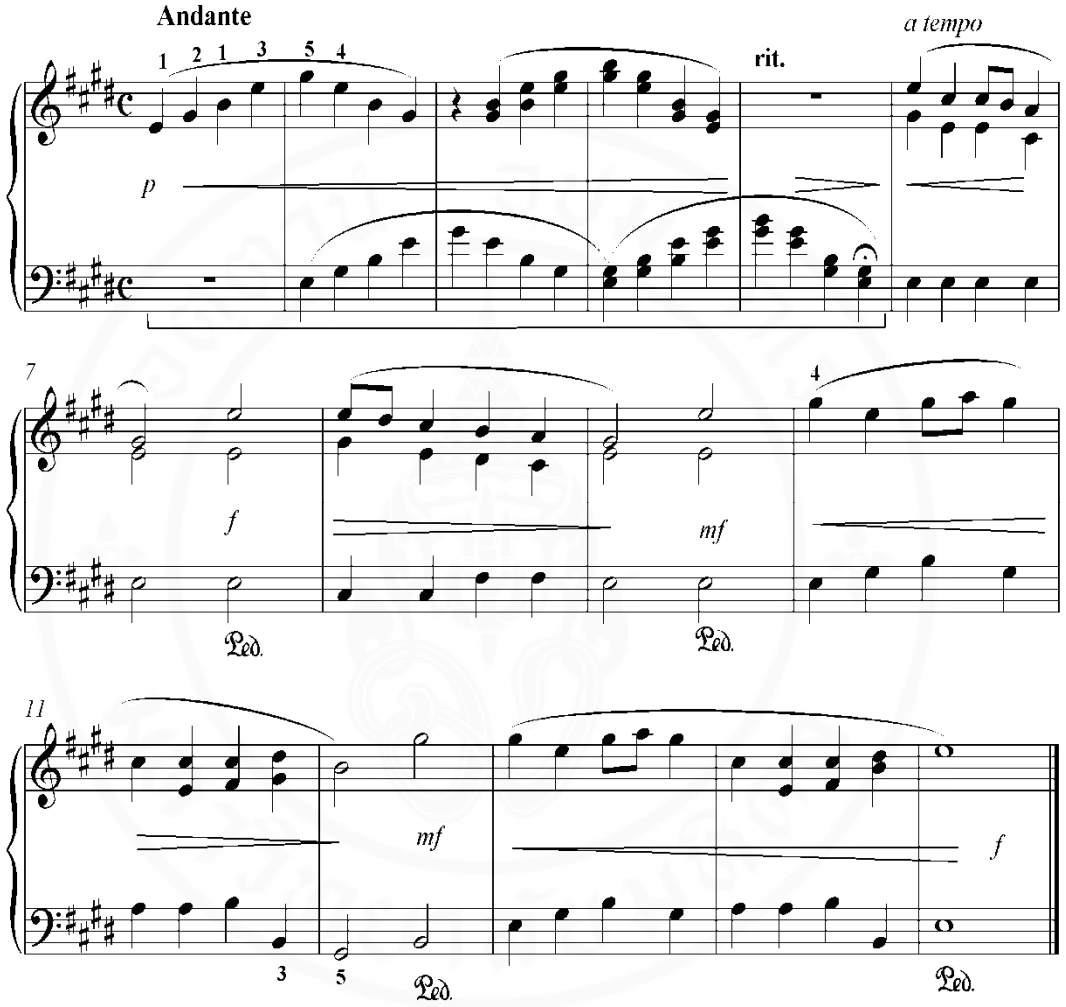
No. 3



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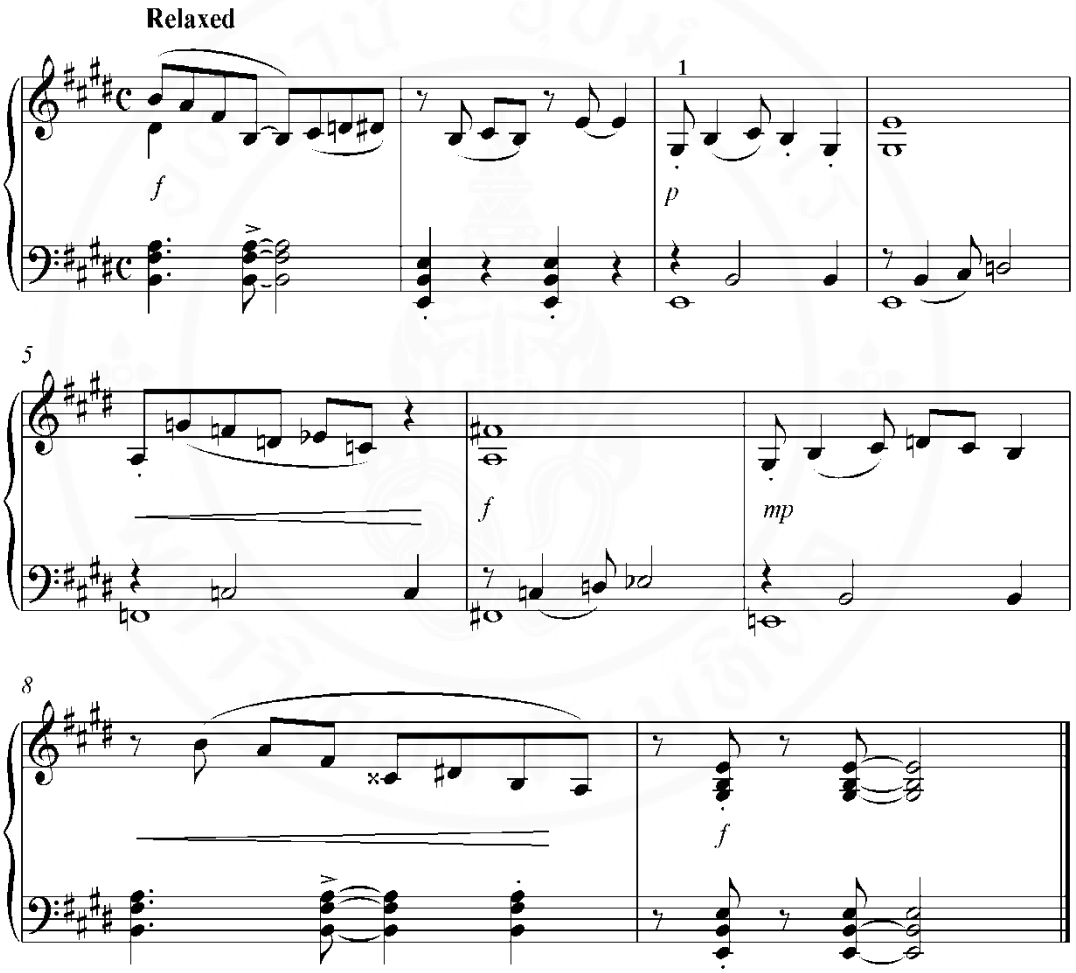
Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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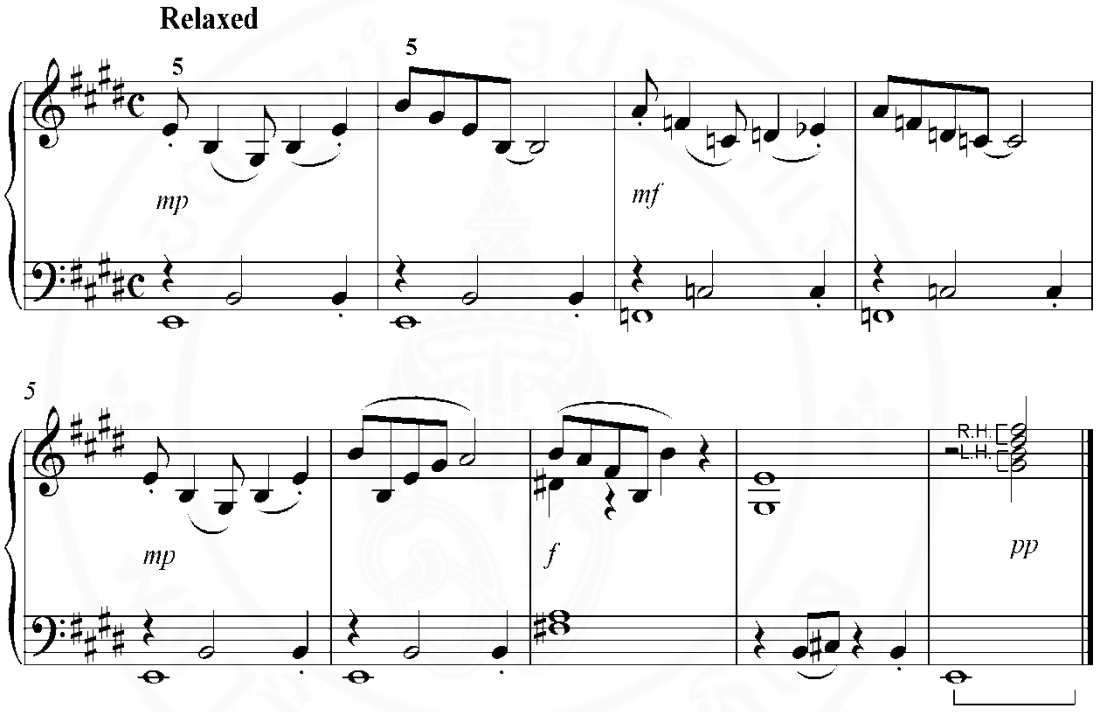
Exercises

See the blue card

No. 1



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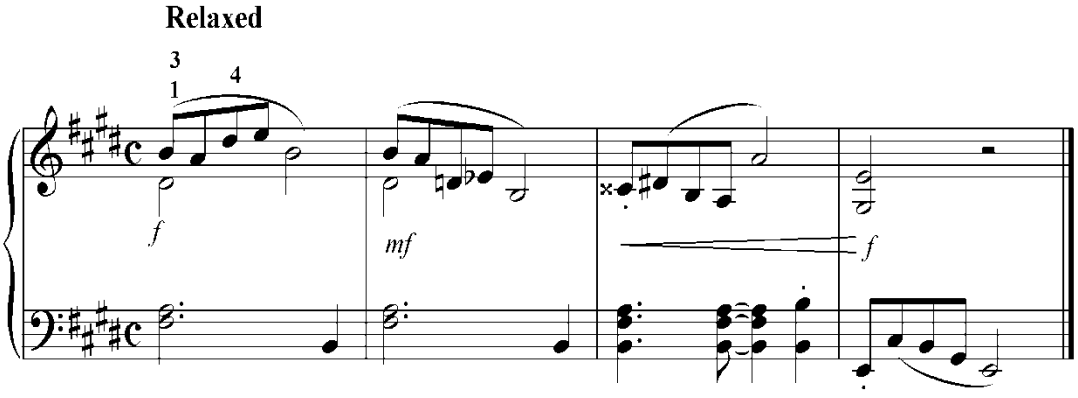

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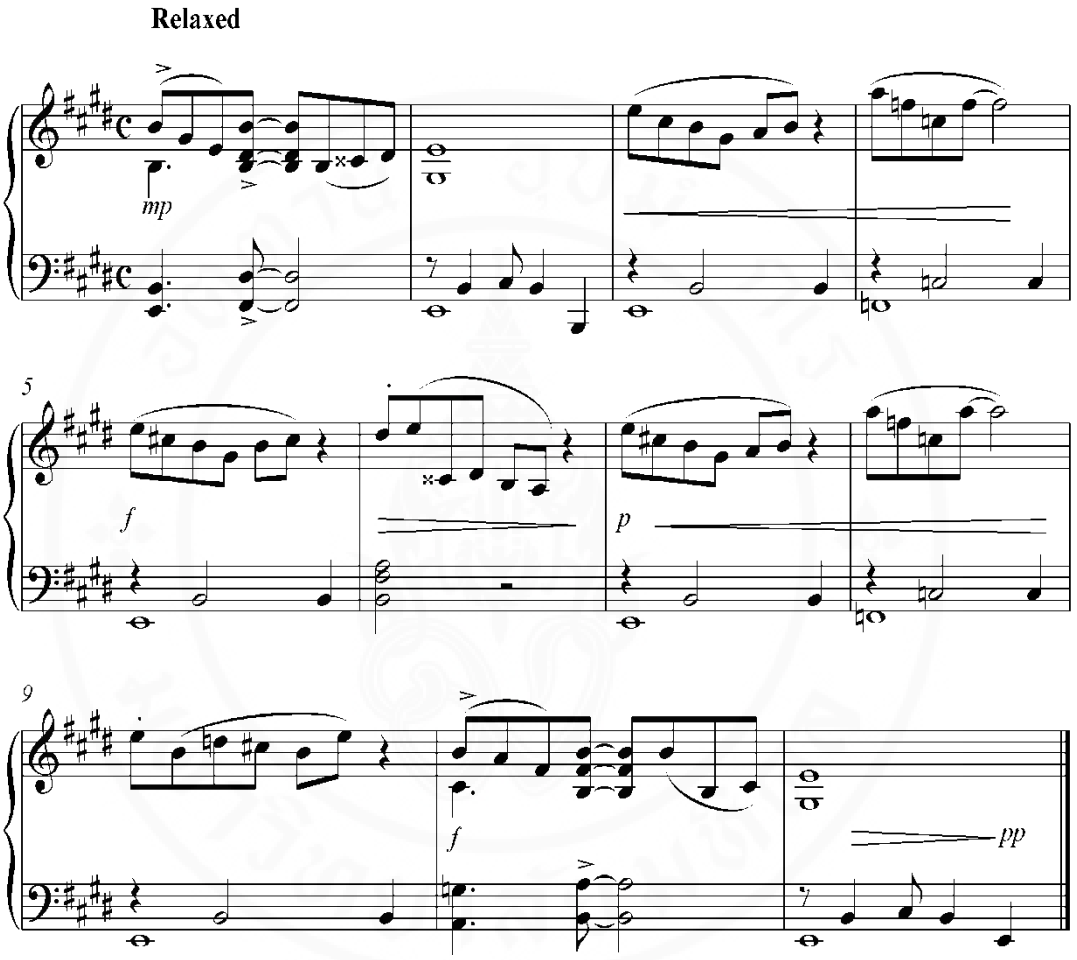
No. 3



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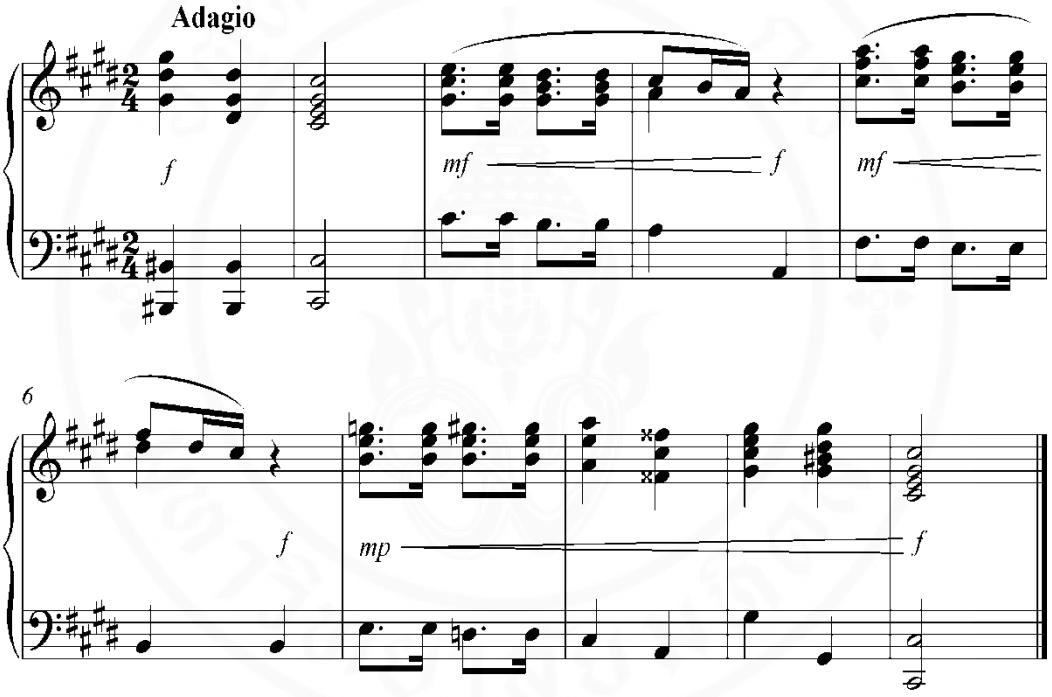
Chapter 2

Episode 2.1

Pre/Post-exercise 2.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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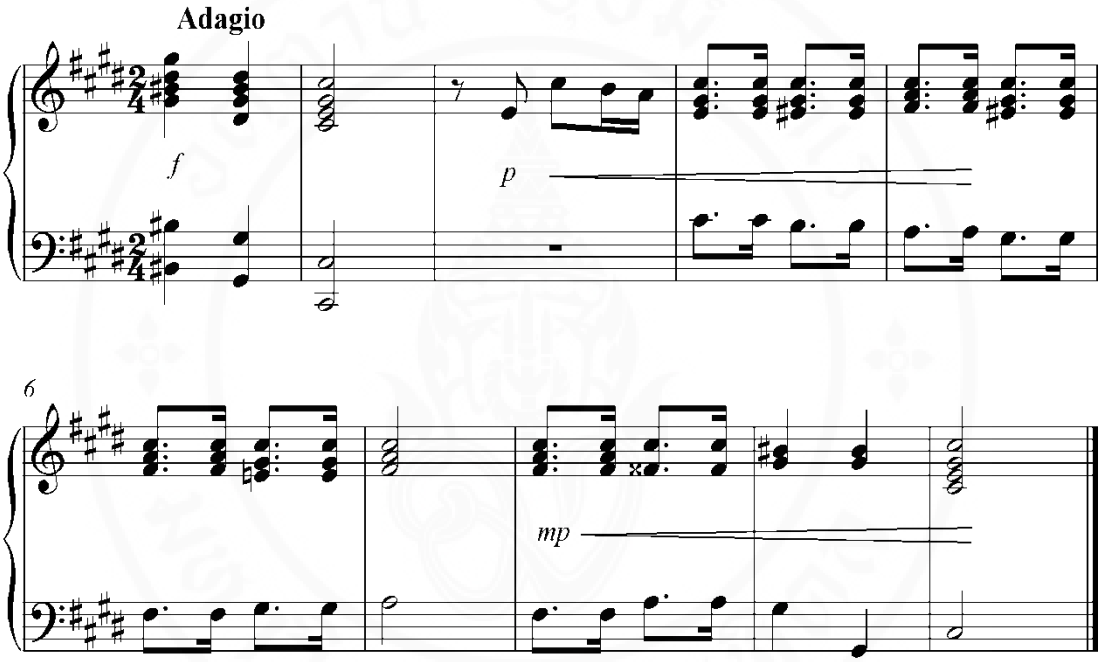
Exercises

See the blue card

No. 1



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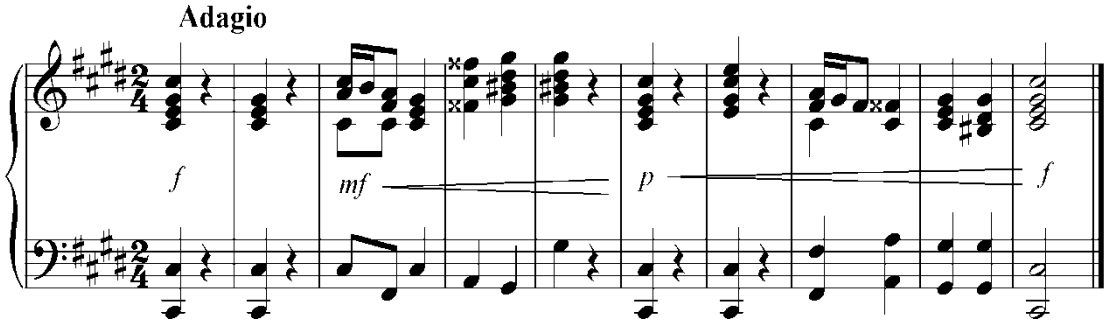

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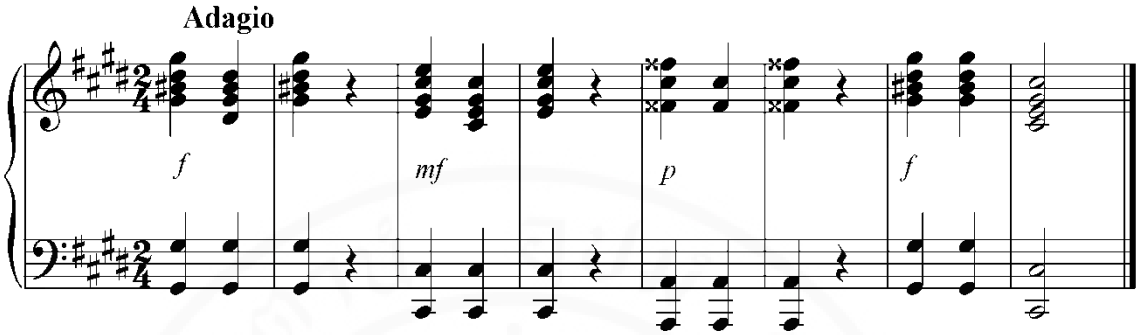
No. 3



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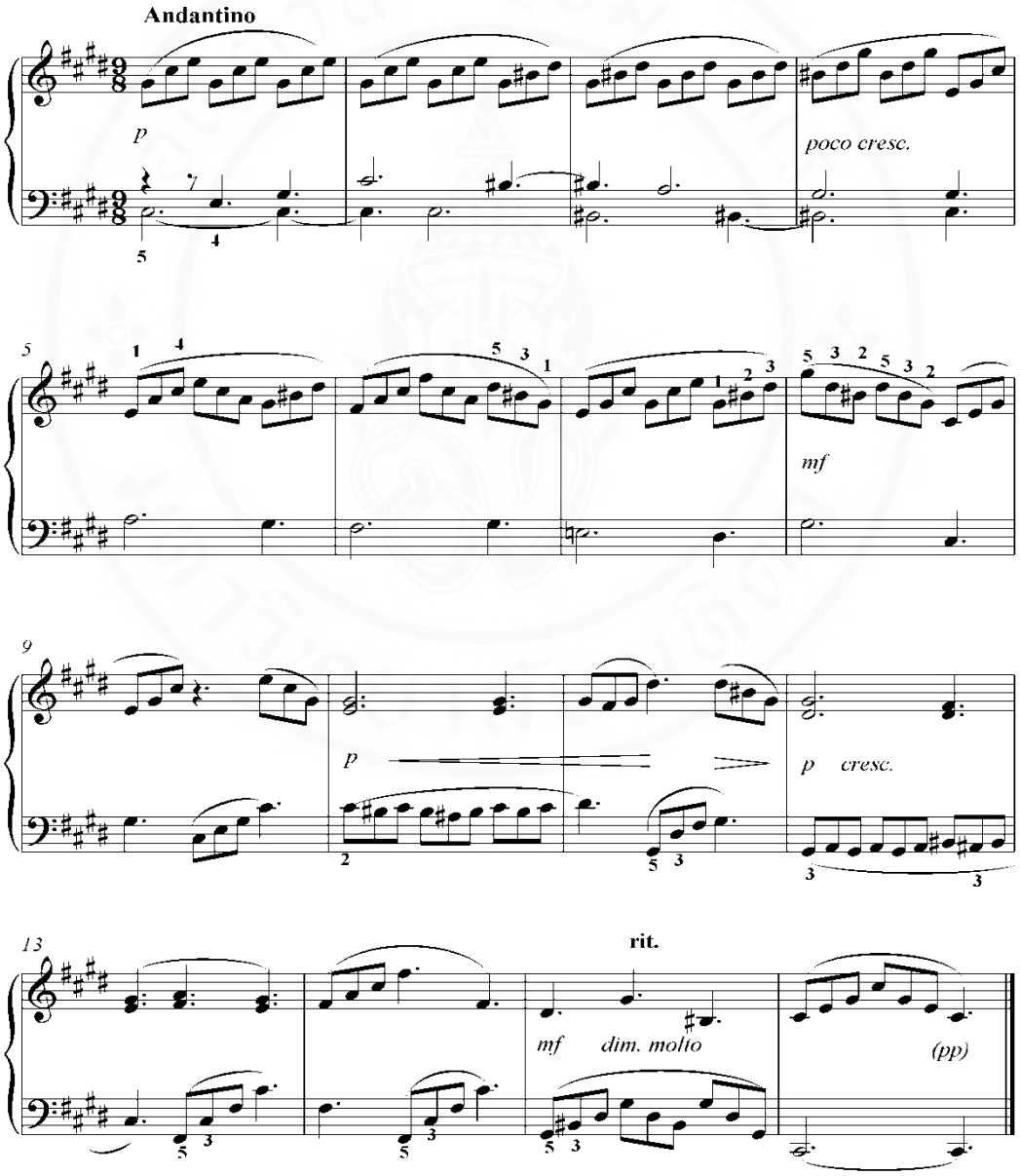
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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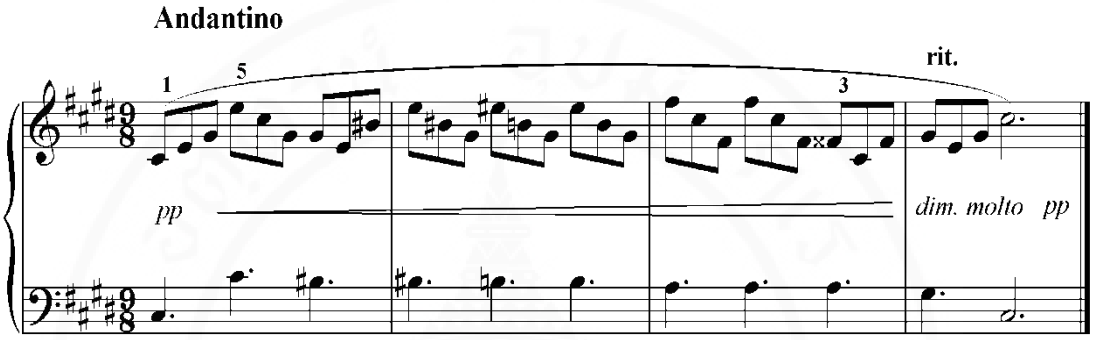
Exercises

See the blue card

No. 1



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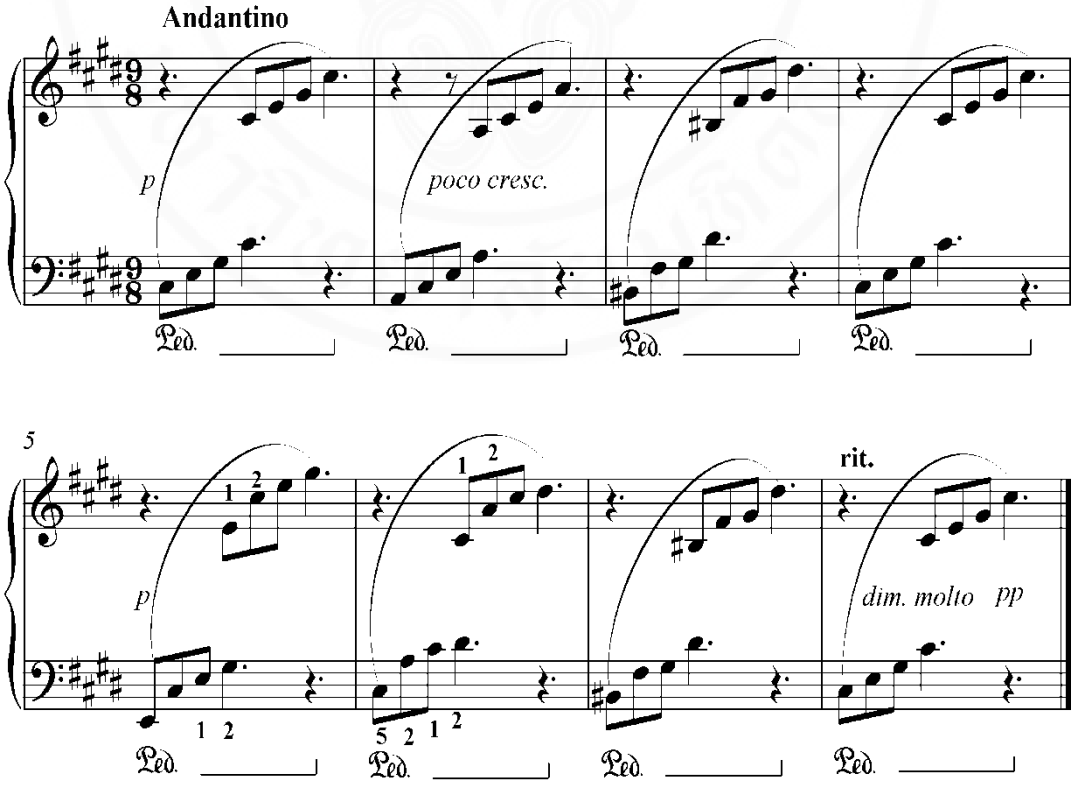

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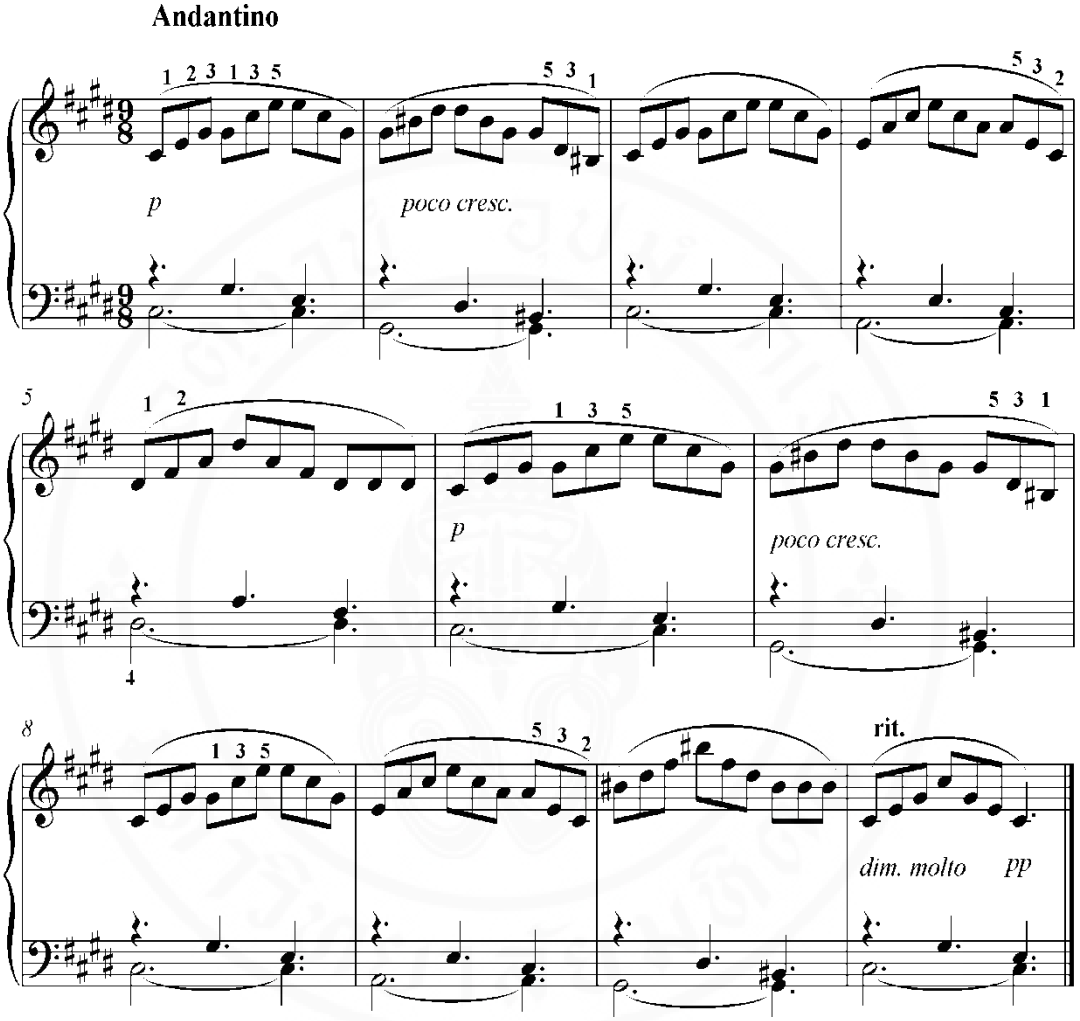
No. 3



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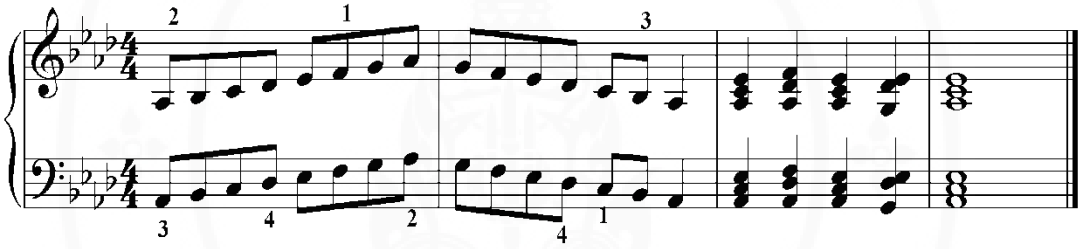
BOOK 10

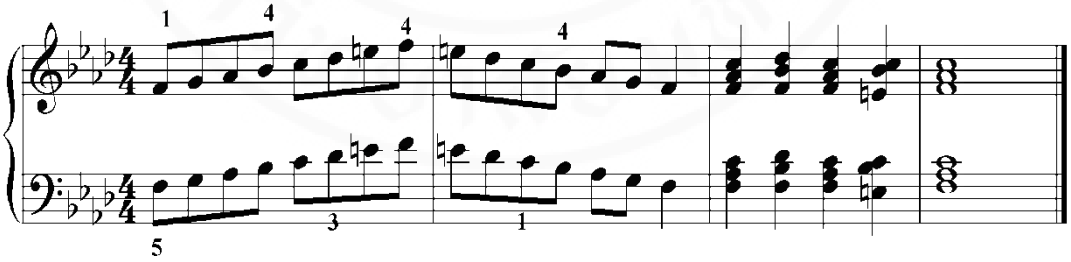
UNIT 9

Unit 9: Review of Ab major and F minor

Key signature with four flats
Ab major



F harmonic minor



The secret of key specification…
When you see the piece with four flats in the key signature part, think sequentially that:
1. What are the possible keys both of major and minor?
2. You should get the area of the answer key of Ab major and F minor.
3. Choose the last answer by take a glance to the last note, or the last chord.

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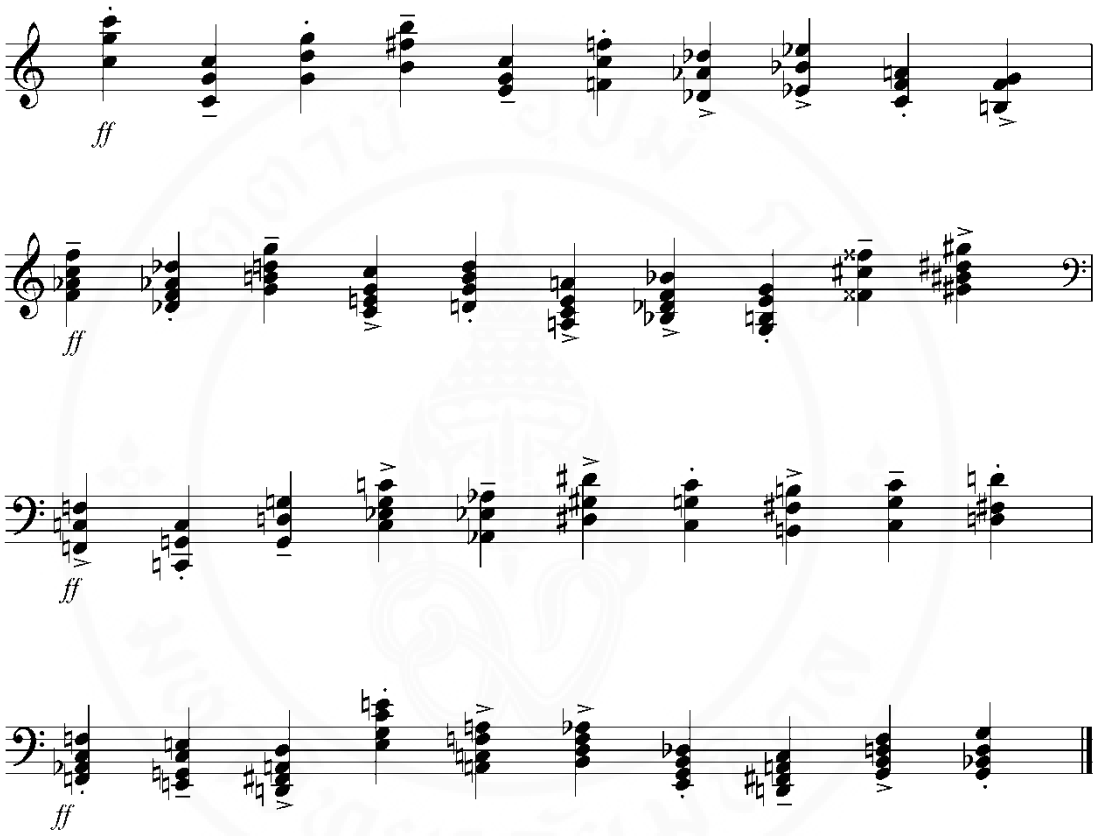
Review of pitch reading and pitch positioning with dynamic and articulation marks



** More exercises, see the supplementary book.

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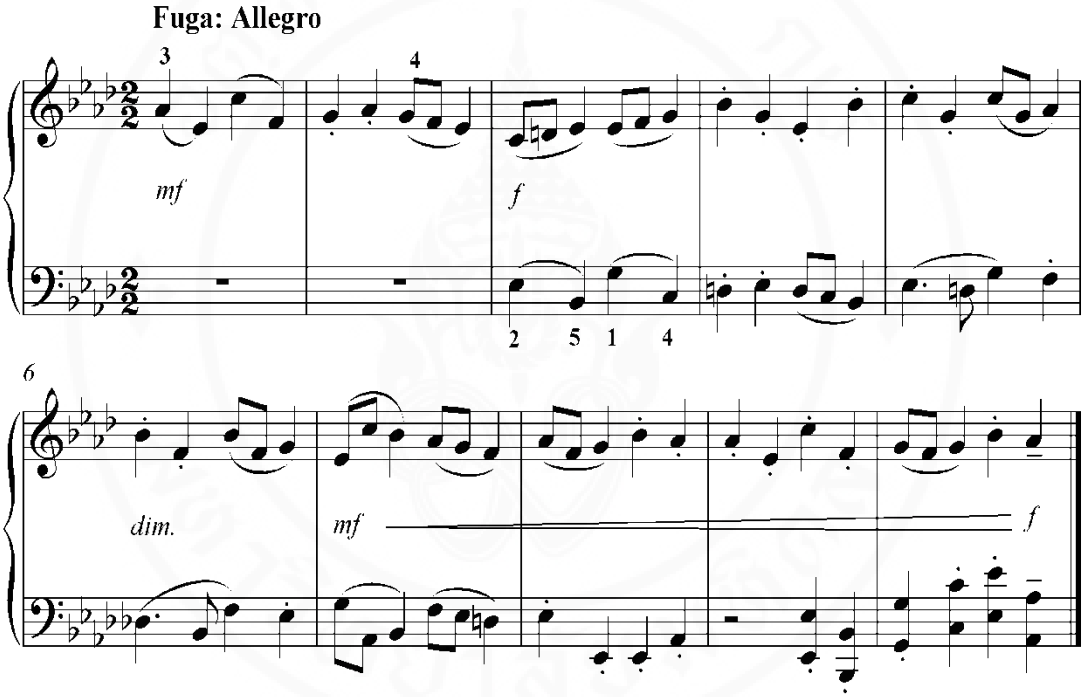
Chapter 1

Episode 1.1

Pre/Post-exercise 1.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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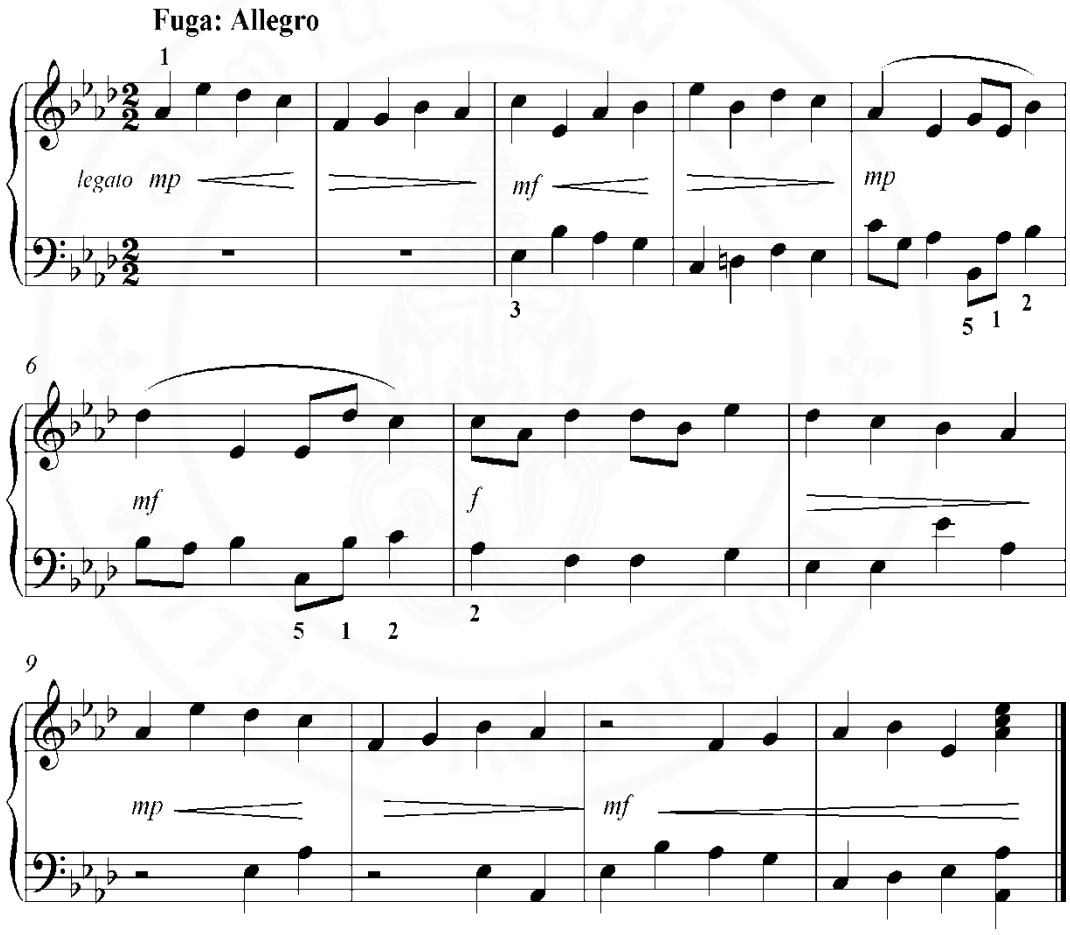
Exercises

See the blue card

No. 1



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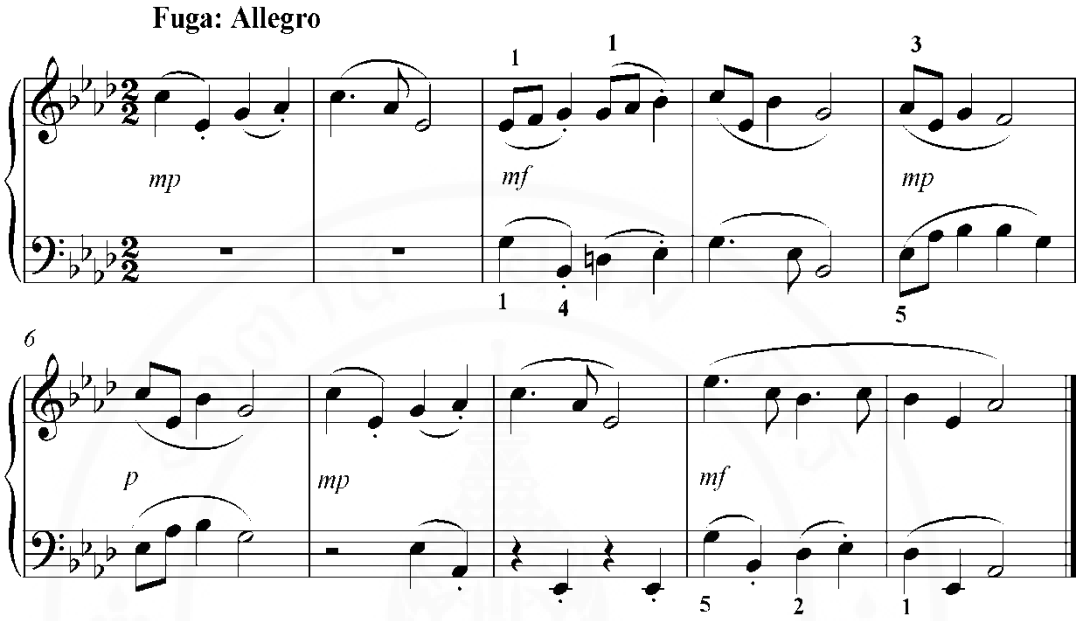
No. 2



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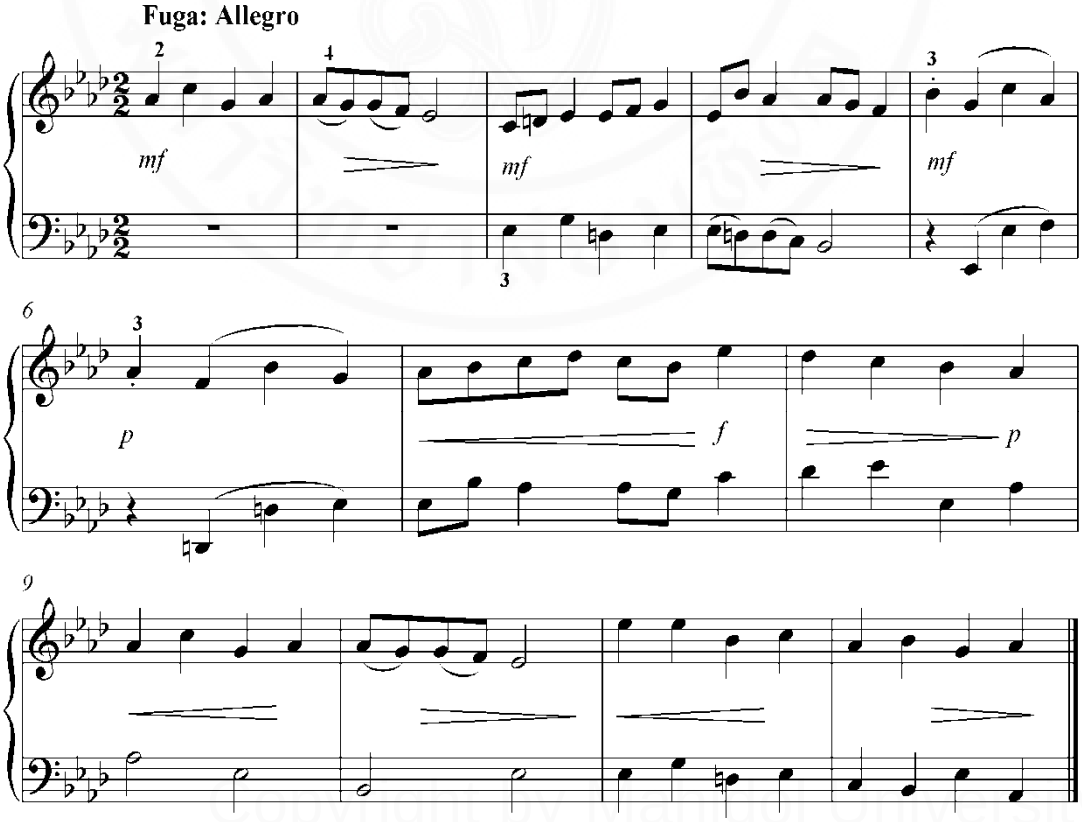

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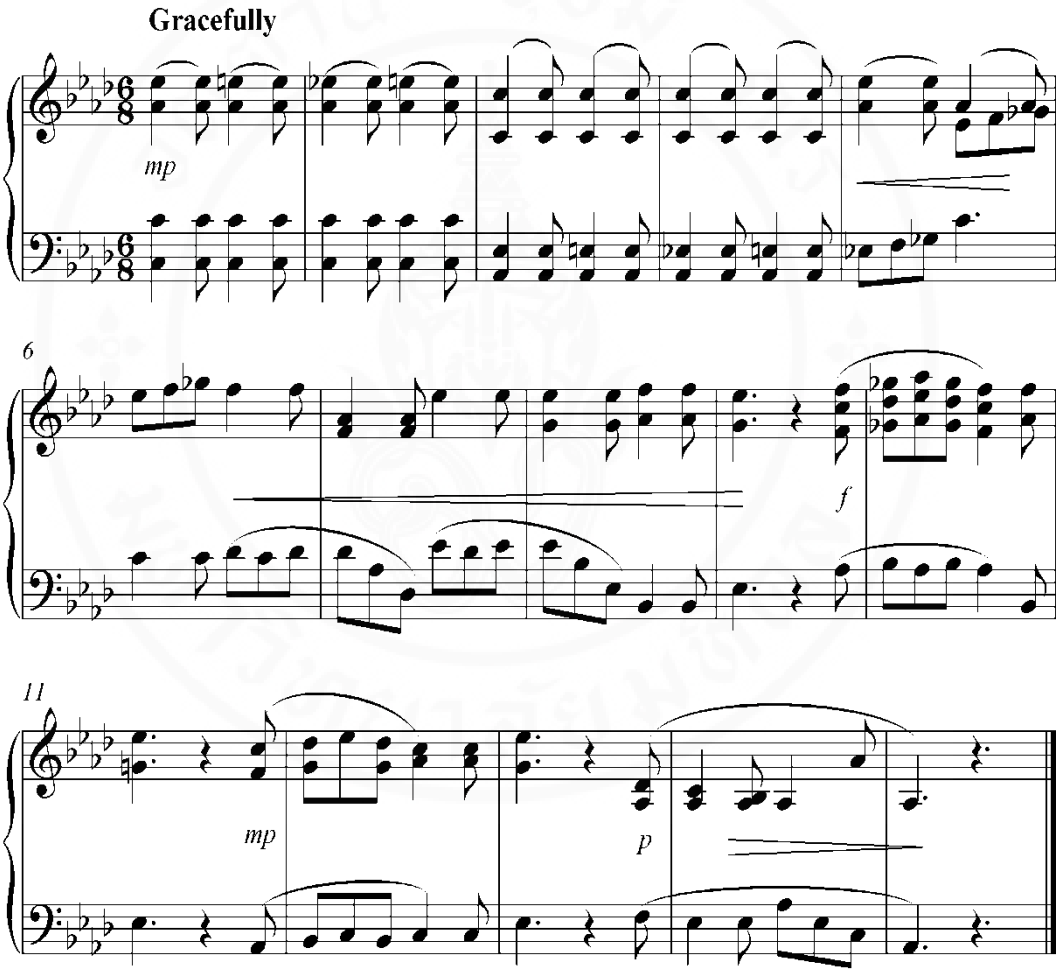
Episode 1.2

Pre/Post-exercise 1.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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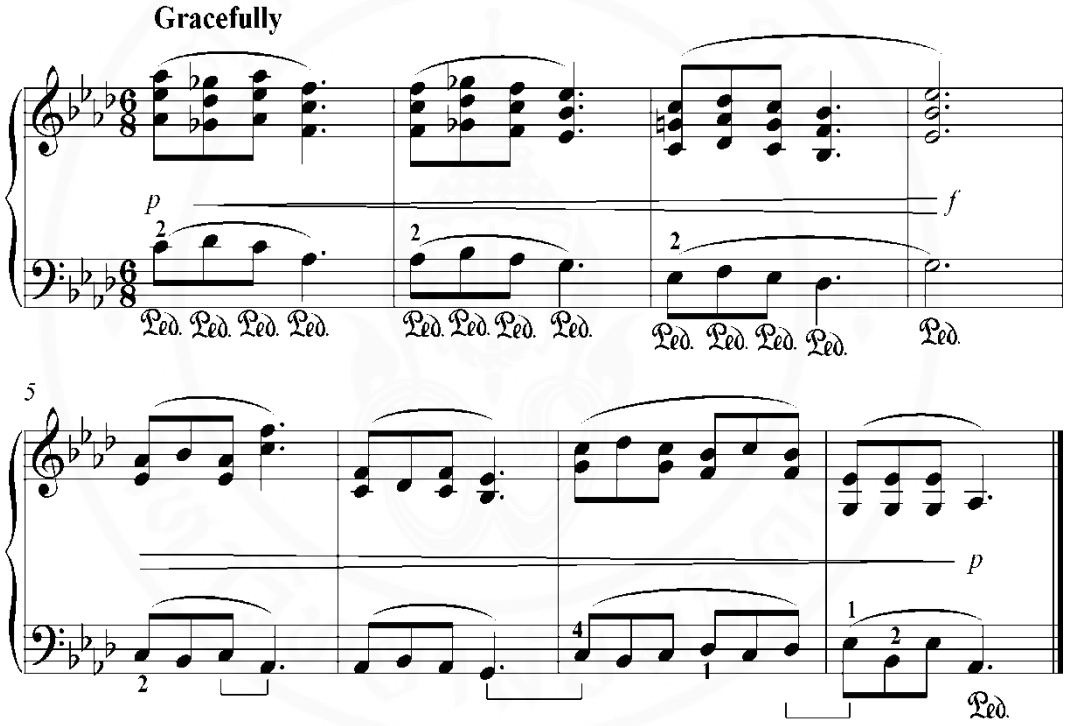
Exercises

See the blue card

No. 1



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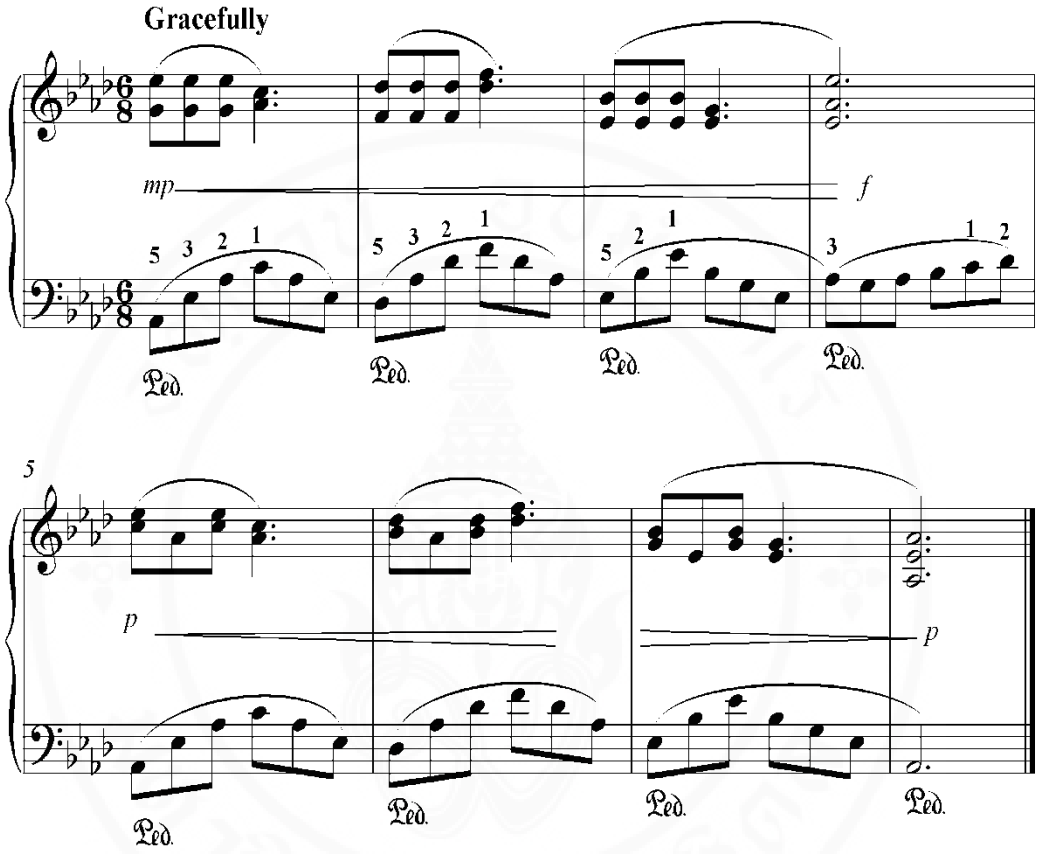
No. 2



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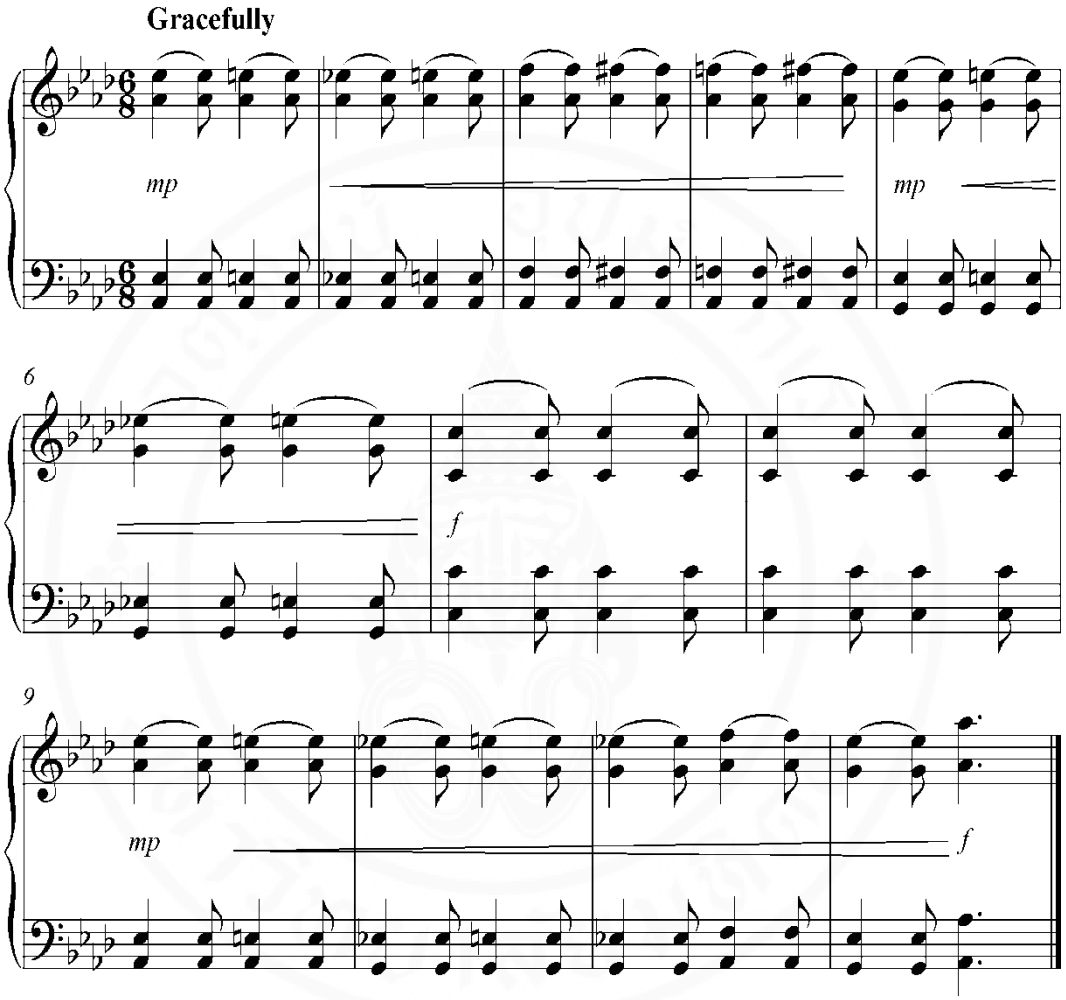
No. 3



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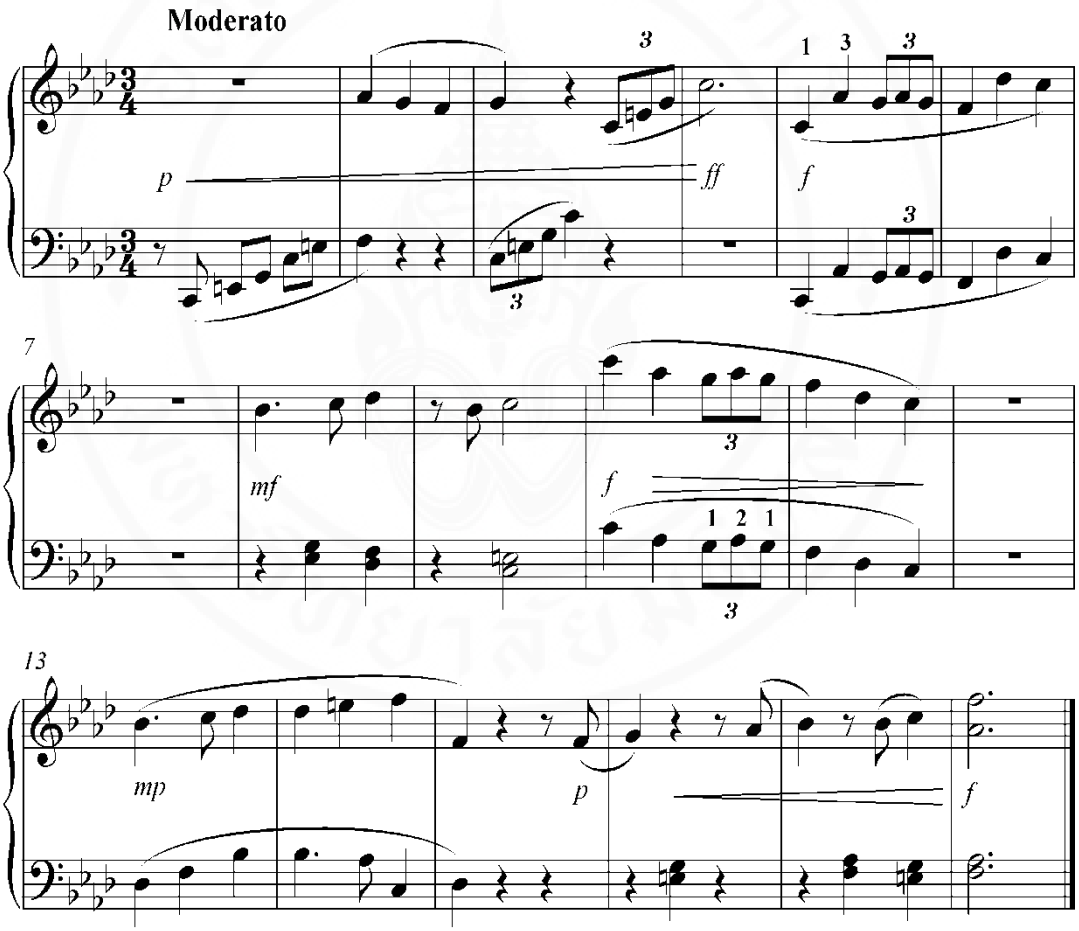
Chapter 2

Episode 2.1

Pre/Post-exercise 2.1

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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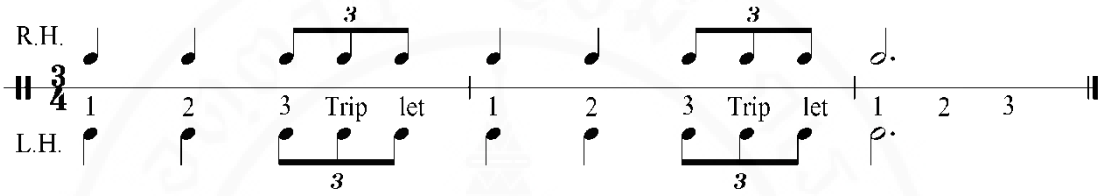
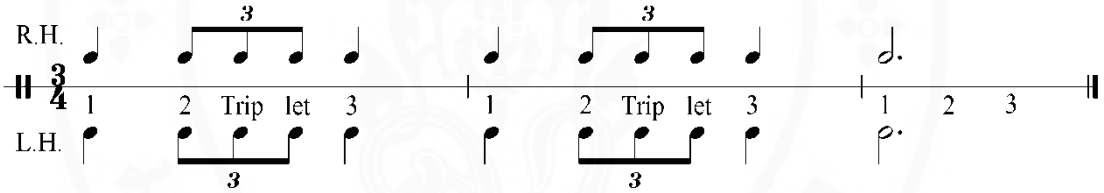
1. Tapping Exercises

See the pink card

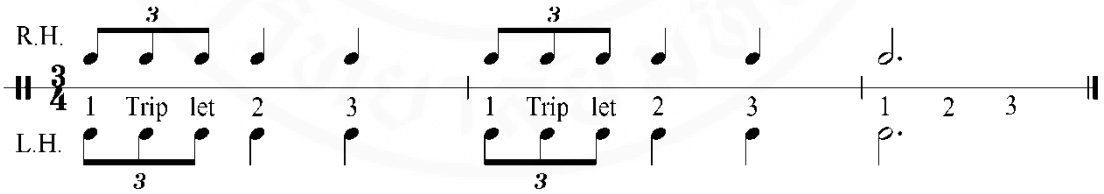
No. 1



No. 2



No. 3



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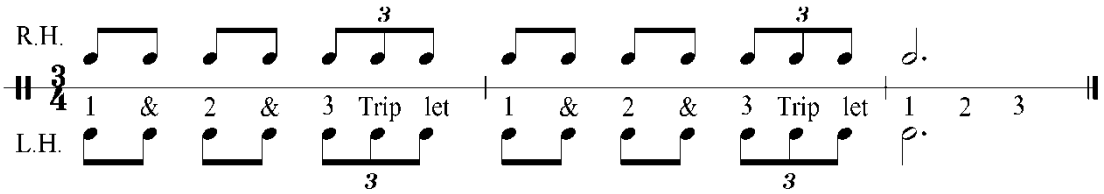

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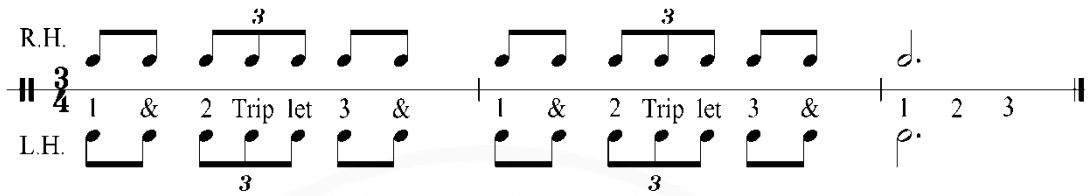
No. 5



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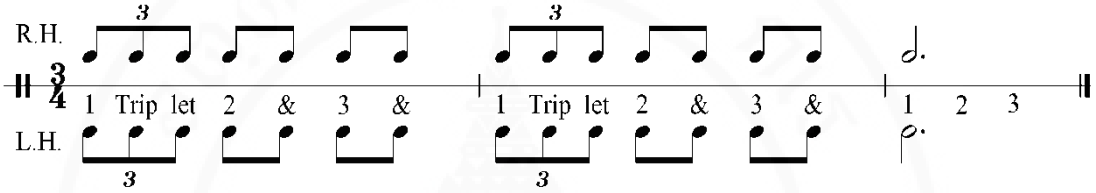
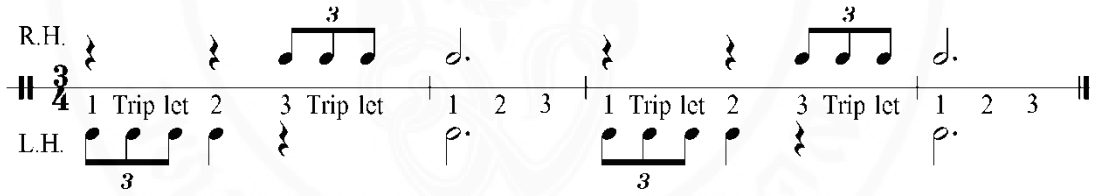
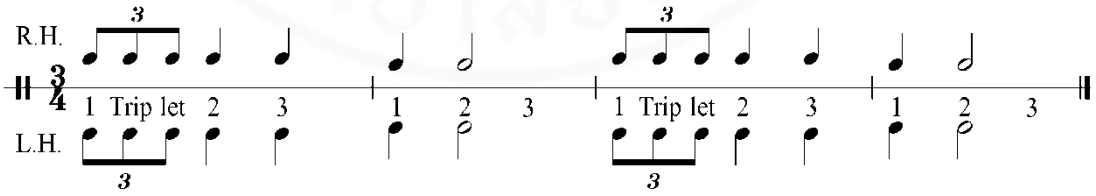


No. 7



No. 8



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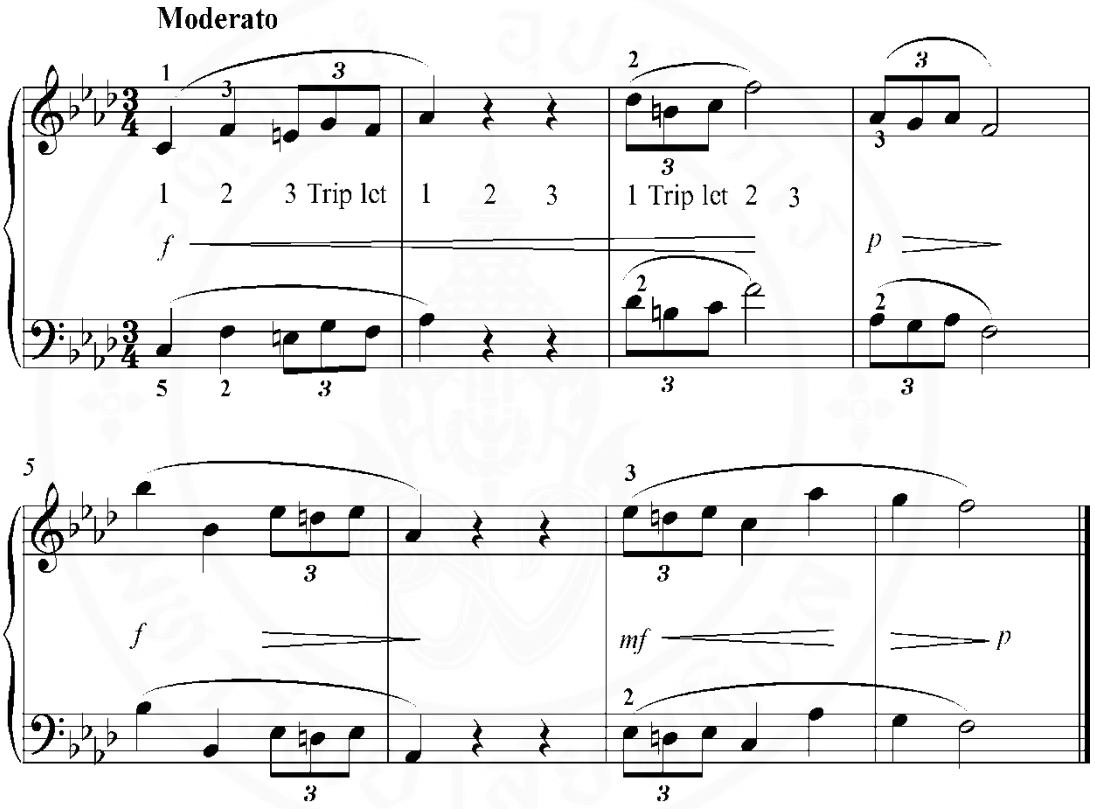
2. Exercises

See the blue card

No. 1



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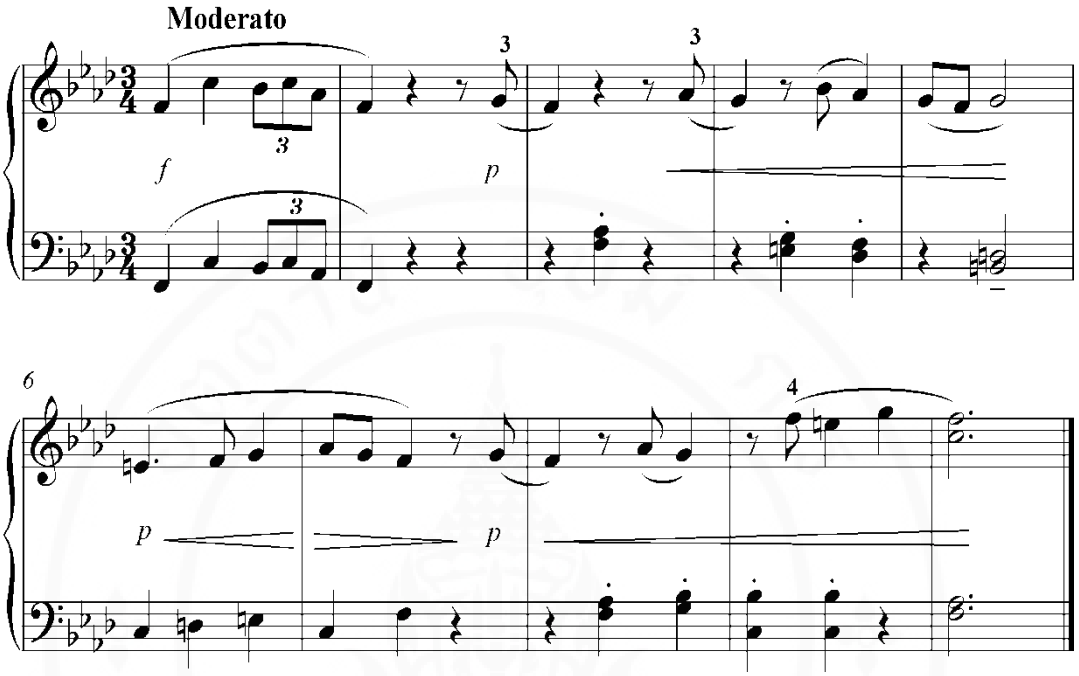
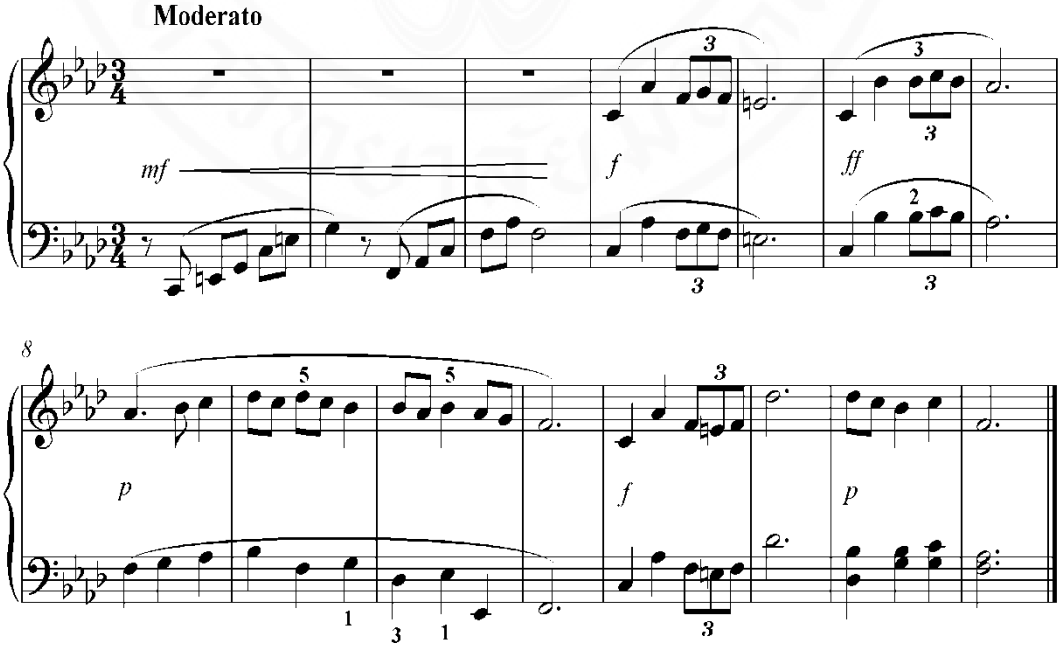
No. 2



No. 3



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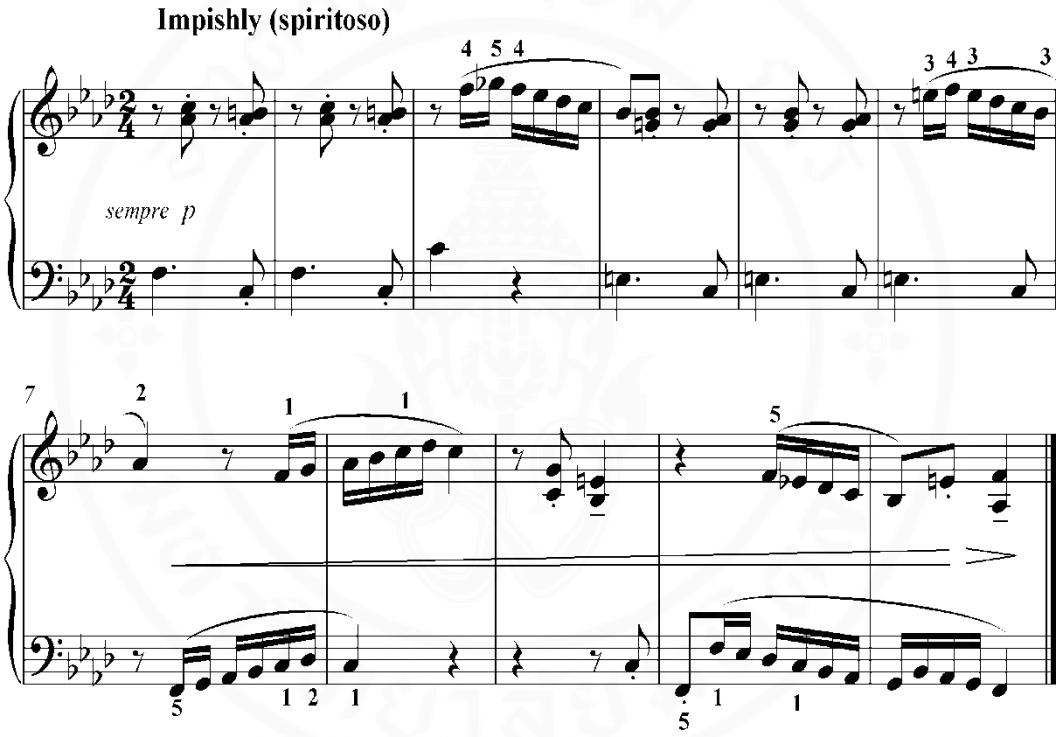
Episode 2.2

Pre/Post-exercise 2.2

Look through the score below within a short interval of time, and then perform the piece without any correction or restart.



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Exercises

See the blue card

No. 1

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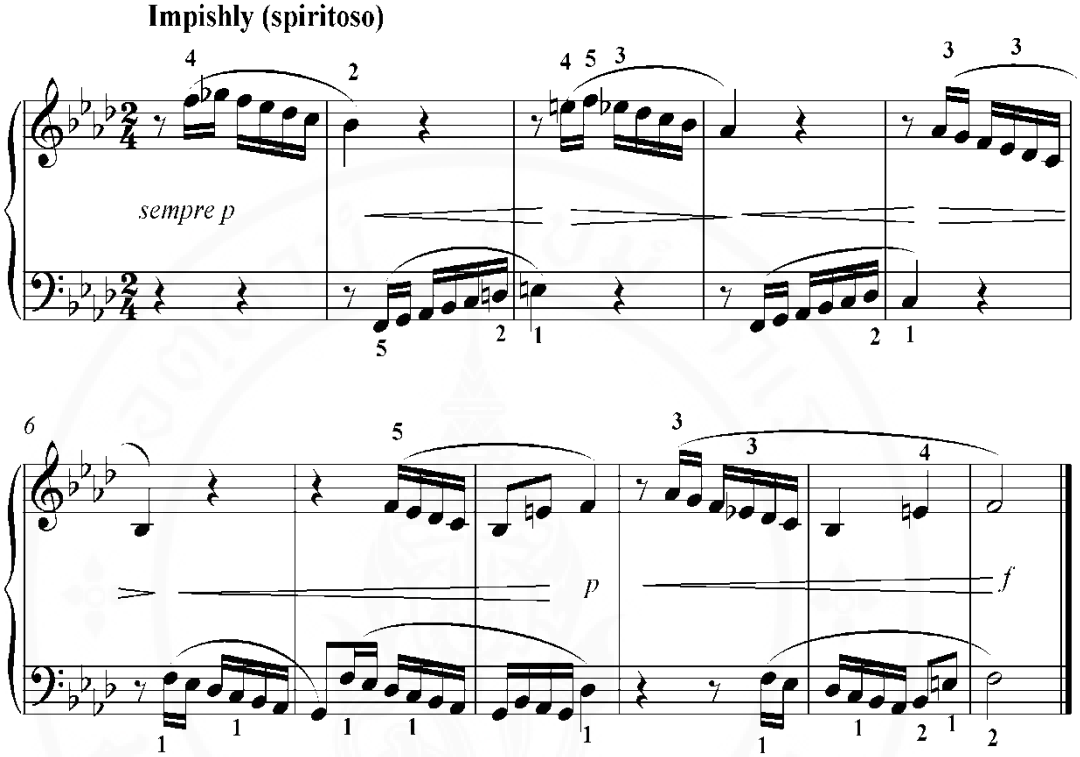
No. 2



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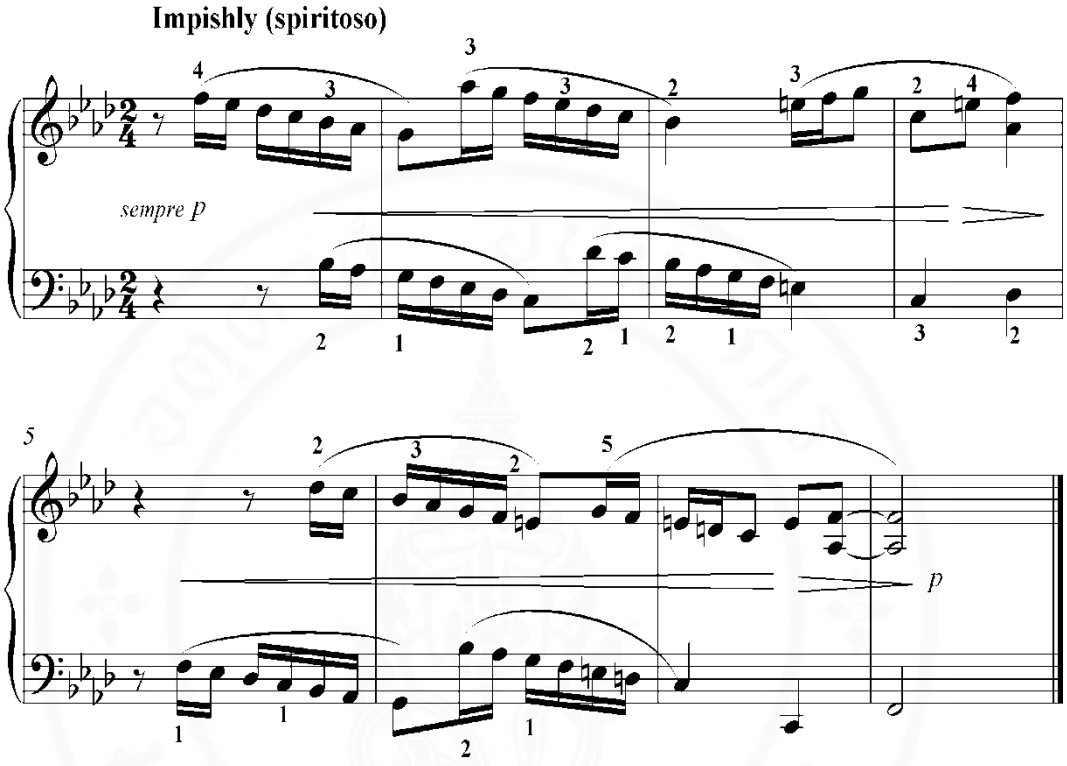
No. 3



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APPENDIX E

TABLE OF THE STUDENTS' SCORES IN EACH ASSESSMENT TOPIC

Note Accuracy: The accuracy of random note

No.	Pre	U1	U2	U3	U4	U5	U6	U7	U8	U 9	Post
1	9.3	12.5	12.5	12.5	10	10	10	10	10	10	10
2	7	12.5	12.5	12.5	10	10	10	10	10	8	10
3	7.8	12.5	12.5	12.5	9	10	10	10	10	9	10
4	10	12.5	12.5	12.5	10	10	10	10	10	10	10
5	10	12.5	12.5	12.5	10	10	10	10	10	10	10
6	10	12.5	12.5	12.5	10	10	10	10	10	10	10
7	10	12.5	12.5	12.5	10	10	10	10	10	10	10
8	10	12.5	12.5	12.5	10	10	10	10	10	10	10
9	10	12.5	12.5	12.5	10	10	10	10	10	10	10
10	10	12.5	12.5	12.5	10	10	10	10	10	10	10
11	4.8	12.5	12.5	12.5	10	10	10	10	10	10	10
12	7	8.8	12.5	12.5	10	9	10	10	10	10	9.3
13	8.5	12.5	12.5	12.5	10	10	10	9	10	10	10
14	10	12.5	12.5	12.5	10	10	10	10	10	10	10
15	7.8	12.5	11.3	12.5	9	8	8	4	5	9	8.5
16	9.3	12.5	11.3	12.5	9	10	9	7	10	8	10
17	4.8	12.5	11.3	12.5	7	9	10	9	9	10	10
18	4.8	7	6.3	12.5	9	9	9	10	10	10	9.3
19	4.8	12.5	12.5	11.3	9	10	10	10	10	10	9.3
20	5.5	12.5	12.5	12.5	10	10	9	10	10	10	10
21	4	10.8	8.8	12.5	8	9	10	10	10	10	10
22	7	10.8	10.2	11.3	10	10	9	9	10	10	10
23	7.8	10.8	11.3	12.5	10	10	10	10	10	10	10

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Note Accuracy: Overall note accuracy

No.	Pre	U1	U2	U3	U4	U5	U6	U7	U8	U 9	Post
1	4.8	12.5	12.5	12.5	9	7	6	7	7	8	10
2	4	12.5	12.5	12.5	9	7	8	10	10	8	9.3
3	4	10.8	10.2	10.2	8	9	8	8	9	6	4.8
4	5.5	12.5	12.5	12.5	10	10	10	10	10	10	9.3
5	9.3	12.5	12.5	12.5	10	9	10	10	10	10	10
6	8.5	12.5	12.5	12.5	10	10	10	9	10	9	10
7	7	12.5	12.5	12.5	10	10	9	10	10	10	10
8	7	12.5	12.5	12.5	10	8	7	10	9	8	10
9	7	12.5	12.5	12.5	10	10	10	8	10	10	10
10	4	12.5	12.5	11.3	8	10	10	8	8	10	9.3
11	4	5	12.5	10.2	7	6	4	10	9	9	7
12	4	10.8	12.5	11.3	7	6	5	6	4	6	7
13	4	12.5	12.5	12.5	10	10	9	10	10	10	8.5
14	6.3	9	11.3	11.3	8	10	8	9	9	9	10
15	4.8	9	7.7	9	5	7	6	7	8	7	7
16	6.3	10.8	11.3	9	6	5	6	8	9	9	7.8
17	4	5	5	6.3	4	5	4	4	4	4	4
18	4	7	7.7	6.3	5	5	4	4	6	5	7
19	4	7	7.7	6.3	5	6	4	4	6	5	5.5
20	4	9	10.2	10.2	8	7	5	7	6	7	7
21	4	7	7.7	7.7	6	7	4	4	4	4	5.5
22	5.5	10.8	11.3	9	9	9	9	9	10	7	10
23	6.3	10.8	10.2	10.2	7	8	9	9	9	7	10

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Note Accuracy: Note with sharp or flat signs flows key signature

No.	Pre	U1	U2	U3	U4	U5	U6	U7	U8	U 9	Post
1	4.8	12.5	12.5	10	10	8	7	8	9	8	9.3
2	5.5	12.5	12.5	12.5	10	10	8	10	10	8	8.5
3	5.5	8.8	12.5	12.5	10	10	10	9	9	7	6.3
4	8.5	12.5	10	12.5	10	10	10	10	10	10	10
5	9.3	12.5	12.5	12.5	10	9	10	10	10	10	10
6	9.3	12.5	12.5	12.5	10	10	10	10	9	10	10
7	8.5	12.5	12.5	12.5	10	9	9	10	10	10	10
8	8.5	12.5	12.5	12.5	9	9	8	10	9	8	10
9	7.8	12.5	11.3	11.3	9	9	10	8	9	10	10
10	4	12.5	12.5	12.5	10	10	10	10	9	10	10
11	5.5	12.5	10	12.5	9	10	6	10	10	9	10
12	4	12.5	12.5	12.5	8	7	6	7	6	6	7
13	5.5	12.5	12.5	11.3	10	10	10	10	10	10	9.3
14	7	9	11.3	11.3	8	10	7	10	10	10	10
15	6.3	10.8	10	12.5	7	7	7	7	10	8	7
16	7	12.5	11.3	10	5	8	8	9	10	9	7.8
17	4	7	7.5	7.7	4	5	10	10	9	10	4.8
18	4	7	9	9	5	4	4	4	6	5	6.3
19	4	7	7.7	6.3	5	6	4	4	6	5	6.3
20	4	12.5	12.5	10.2	8	7	5	7	6	7	7
21	4	9	6.3	7.7	6	4	4	4	4	5	7
22	5.5	12.5	11.3	10	8	9	9	10	9.3	9	10
23	6.3	12.5	12.5	12.5	9	9	10	10	10	10	10

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Note Accuracy: Ending with dominant (V) to tonic (I)

No.	Pre	U1	U2	U3	U4	U5	U6	U7	U8	U 9	Post
1	4	12.5	12.5	12.5	10	9.3	8	7	9.3	10	7
2	7	12.5	12.5	12.5	10	8	7	9	8	10	10
3	5.5	12.5	12.5	12.5	9	9	9	8	9	10	8.5
4	8.5	12.5	12.5	12.5	10	10	10	10	8	8	7.8
5	10	12.5	12.5	12.5	8	10	10	10	10	9	10
6	8.5	12.5	12.5	12.5	8	10	8	10	8	9	10
7	7	12.5	12.5	12.5	8	6	10	10	10	10	10
8	7.0	12.5	12.5	12.5	10	9	9	10	10	10	10
9	5.5	12.5	11.3	12.5	10	10	10	10	9	10	10
10	8.5	9	12.5	12.5	8	9	8	9	10	10	10
11	5.5	5	11.3	12.5	10	9	10	8	10	7	9.3
12	5.5	5	6	12.5	8	9	9	8	4	6	8.5
13	7.8	8.8	12.5	7.5	8	5	9	8	10	8	10
14	4	5	5	7.7	7	7	10	10	8	7	7.8
15	6.3	12.5	10	12.5	9	9.3	7	7	9	8	8.5
16	7	9	12.5	11.3	9.3	7	8	8	9	9	7.8
17	4.8	5	5	7.7	4	4	4	4	4	4	6.3
18	4	7	9	9	5	4	4	5	5	6	6.3
19	4	7	6	7.7	5	4	4	4	4	5	4.8
20	4.8	10.8	11.3	12.5	8	6	5	4	4	5	7.8
21	4	7	5	5	7	4	4	4	4	5	5.5
22	10	12.5	12.5	11.3	10	10	10	10	8	7	10
23	7	10.8	11.3	10.2	7	8	9	9	9	10	10

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Rhythm accuracy: Rhythmic pattern accuracy

No.	Pre	U1	U2	U3	U4	U5	U6	U7	U8	U 9	Post
1	11	25	22.7	22.7	20	20	20	16	16	18	17
2	11	25	22.7	22.7	14	16	14	18	12	20	15.5
3	8	21.5	22.7	20	12	14	12	12	14	12	14
4	11.5	25	25	25	20	20	20	18	20	20	18.5
5	9.5	25	25	25	20	18	20	20	20	20	20
6	12.5	25	25	25	20	20	20	18	20	20	18.5
7	14	25	25	25	20	16	20	20	20	20	20
8	14	25	25	25	20	20	20	20	18	20	18.5
9	12.5	18	25	22.7	14	14	18	14	14	14	17
10	8	25	25	25	18	20	16	20	18	18	20
11	9.5	18	20.3	18	12	12	10	16	10	18	10.5
12	10	25	25	22.7	20	16	18	20	18	20	20
13	8	20	25	25	20	20	20	20	20	20	18.5
14	6.3	18	25	22.7	12	16	16	18	16	18	20
15	11	17.5	17.7	17.7	14	16	8	14	20	20	15.5
16	12.5	21.5	25	15.3	10	12	14	18	18	16	15.5
17	8	10	12.7	15.3	10	12	8	10	8	10	14
18	8	14	12.7	12.7	10	12	10	8	10	10	11
19	8	18	20.3	15.3	12	14	10	12	14	12	14
20	8	21.5	25	22.7	16	14	10	12	12	14	14
21	8	10	15.3	15.3	10	8	10	8	10	10	12.5
22	14	25	17.7	18	12	18	18	14	16	20	18.5
23	15.5	25	25	22.7	20	18	20	18	18	20	20

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Rhythm accuracy: Fluency of performance

No.	Pre	U1	U2	U3	U4	U5	U6	U7	U8	U 9	Post
1	12.5	25	25	20	12	18	18	16	18	20	20
2	9.5	25	25	25	20	20	20	20	20	20	20
3	8	17.5	15	12.7	8	10	8	8	10	8	8
4	9.5	25	22.7	25	20	18	18	20	20	20	20
5	8	21.5	22.7	22.7	20	20	20	20	20	20	20
6	11	25	25	25	20	18	20	20	20	18	18.5
7	14	25	25	25	20	18	20	20	20	20	20
8	14	25	25	25	20	20	20	20	20	20	18.5
9	14	18	18	20.3	18	16	16	14	14	16	20
10	8	25	25	25	20	18	16	20	20	20	20
11	8	21.5	25	25	18	12	14	18	12	10	8
12	17	25	25	25	20	18	20	20	20	20	20
13	11	25	25	25	20	20	20	20	20	20	18.5
14	5.5	18	22.7	20.3	16	18	14	20	20	20	20
15	8	18	22.7	15.3	12	16	14	12	16	16	15.5
16	9.5	21.5	25	20.3	14	12	14	16	20	18	15.5
17	8	10	12.7	12.7	8	8	8	8	8	8	14
18	8	10	12.7	12.7	10	10	10	8	8	10	11
19	8	14	17.7	15.3	14	12	8	12	14	12	14
20	8	25	25	22.7	18	12	10	14	12	14	14
21	8	10	12.7	12.7	8	8	8	8	8	10	12.5
22	12.5	25	20.3	15.5	14	14	18	18	16	18	18.5
23	11	21.5	25	20.3	16	18	20	20	18	20	20

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Dynamic

No.	Pre	U4	U5	U6	U7	U8	U 9	Post
1	4	7	6	5	5	7	7	8.5
2	4	8	10	8	8	9	10	7.8
3	4	4	5	5	8	4	4	7
4	4	10	9	7	6	10	10	10
5	5.5	7	7	10	10	10	10	10
6	4	9	7	6	8	10	9	9.3
7	4	10	5	7	10	10	10	10
8	4	9	10	8	10	10	10	8.5
9	4	7	7	7	7	8	9	7.8
10	4	10	9	8	7	10	8	10
11	4	10	6	9	10	9	9	9.3
12	4	9	6	6	5	7	5	10
13	4	10	8	10	8	9	9	8.5
14	4	6	7	7	7	7	7	8.5
15	6.3	5	4	4	5	4	4	7
16	4	5	5	4	7	6	4	7
17	4	4	4	4	4	4	4	4
18	4	4	4	4	4	4	4	6.3
19	4	4	4	4	4	4	4	4
20	4	4	4	4	4	4	4	4
21	4	4	4	4	4	4	4	4
22	5.5	8	10	10	8	9	8	10
23	4.8	6	9	8	10	10	9	10

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Articulation

No.	Pre	U4	U5	U6	U7	U8	U 9	Post
1	7.8	10	10	10	10	10	10	8.5
2	4	10	10	10	10	10	10	8.5
3	4	10	10	10	10	10	10	8.5
4	4	10	9	8	10	10	10	10
5	5.5	10	10	10	10	10	10	10
6	5.5	10	9	8	10	10	10	10
7	4	10	9	10	10	10	10	10
8	4	9	10	10	10	10	10	9.3
9	4	7	7	9	9	7	9	10
10	4	10	10	9	10	10	9	10
11	7.8	10	10	10	10	10	6	9.3
12	4	10	9	6	10	10	10	9.3
13	4	10	10	10	10	10	10	10
14	4	6	7	7	9	8	10	8.5
15	6.3	9	7	6	8	8	9	7
16	6.3	8	8	8	8	9	9	9.3
17	4	4	4	4	4	4	4	4
18	4	4	4	4	4	4	4	7
19	4	4	4	4	4	4	4	4
20	4	4	4	4	4	4	4	4
21	4	4	4	4	4	4	4	4
22	4	7	8	9	8	9	10	7.8
23	4	6	8	8	8	10	10	8.5

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APPENDIX F

QUESTIONAIR OF THE STUDENTS' SATISFACTION TOWARDS A REMEDIAL PIANO SIGHT-READING SELF-INSTRUTIONAL PACKAGE FOR INTERMEDIATE PIANO STUDENTS

Section 1: General information

1. Age

☐ 10-12 ☐ 13-15 ☐ 16-18 ☐ From 19 above

2. An average duration for practicing 1 unit (1book)

☐ 1 hour ☐ 2 hours ☐ 3 hours ☐ 4 hours ☐ From 5 hours above

3. Please assess about your discipline in practicing *A remedial sight-reading self-instructional package for intermediate piano student*s

☐ Very good ☐ Good ☐ Should be improved

4. Please evaluate the level of the benefit of *A remedial sight-reading self-instructional package for intermediate piano student*s towards your sight-reading improvement

☐ High ☐ Moderate ☐ Low

Section 2: The student's satisfaction

5 means the level of the highest satisfaction 4 means the level of the high satisfaction
3 means the level of the medium satisfaction 2 means the level of the low satisfaction
1 means the level of the lowest satisfaction

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Main topic	Sub-topic	Level of the satisfaction				
		5	4	3	2	1
Benefit of the content arrangement	1. Benefit of pitch reading and locating **without** dynamic and articulation markings					
	2. Benefit of pitch reading and locating **with** dynamic and articulation markings					
	3. Benefit of the exercise arranging in relative keys					
	4. Benefit of the arranging of similar character of pieces in each chapter					
	5. Benefit of providing guidelines to count the rhythmic patterns					
	6. Benefit of the rhythmic pattern exercises and guideline to count the rhythmic patterns					
	7. Benefit of fingering guideline					
	8. Benefit of sequencing thinking cards					
The suitability of the content	9. Suitability of the arrangement of the exercises of pitch reading and locating from easiness to difficulty					
	10. Suitability of the arrangement of the exercises from simple keys to more complicated keys					
	11. Suitability of the pieces with similar character in each chapter					
	12. Suitability of the guideline of rhythmic pattern counting					
	13. Suitability of the rhythmic pattern exercises					
	14. Suitability of the fingering guideline					
	15. Suitability of the explanation in sequencing thinking cards					
	16. Suitability of the explanation in books					
	17. Suitability of the difficulty of exercise in books compare with the difficulty of pieces for test					
	18. Suitability of topic of the assessments					
The suitability of the instructional package	19. Suitability of staff's size					
	20. Suitability of texts' size					
	21. Suitability of book design					
	22. Suitability of duration of 10 weeks: 1 book per week					

BIOGRAPHY

NAME	Miss Pornchanan Suravichai
DATE OF BIRTH	28 January 1986
PLACE OF BIRTH	Lampang
INSTITUTIONS ATTEND	Mahidol University, 2008 Bachelor of Arts (Music) Mahidol University, 2012 Master of Arts (Music)
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