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THE

IVAN GALAMIAN SCALE SYSTEM

FOR

VIOLONCELLO

Part I: Scale and Arpeggio Exercises

with

Part II: Bowing and Rhythm Patterns

ARRANGED AND EDITED

BY

HANS JØRGEN JENSEN

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INTRODUCTION TO THE VIOLONCELLO EDITION

As a student of Leonard Rose at the Juilliard School of Music I was first introduced to some of Ivan Galamian's principles of string playing. One of the great cellists and pedagogues of this century, Mr. Rose was very much influenced by Mr. Galamian's teaching. During the summers from 1953 until 1966 Rose taught together with Galamian at the Medowmount School of Music, which Galamian founded. Over the past 15 years I have used the Galamian scale system as an integral part of my own teaching method and I have always felt that there was a strong need to formally adapt this method to the violoncello.

The Galamian scale system is not only a great aid in developing agility and control in the left hand, but is also an invaluable tool for building important basic skills of the bow arm and in developing coordination between the hands. Scale and arpeggio practice is important on all string instruments for the development of strong mental images and a solid physical, tactile sense of fingerboard spacing. Although one can study this book in many different ways it is most effective to practice each chapter in its entirety to gain a clear understanding of the fingering concepts presented. Wherever possible, fingerings have been organized so that they are consistent within each chapter. Once a particular fingering system is understood, keys in any given chapter can be learned in any order. In addition, each individual player should take the time to explore his or her own fingerings since no two people are alike.

Most of Galamian's violin method is very easily adapted to the cello. Chapters 10 through 13 (Scales and Arpeggios in One Position), however, offer the greatest technical challenge to cellists due to the large handshapes and stretches presented. These four chapters can be very helpful in developing the use of the thumb in the low as well as in the high registers. It is nevertheless important to keep in mind that sustained stretching and extending of the hand can be very harmful. Practice chapters 10 through 13 very carefully, always releasing tensions caused through stretching by relaxing the hand immediately after extending it. If any pain or discomfort is felt, stop immediately and rest the hand for a few minutes before continuing.

Read and study the Preface by Ivan Galamian and Frederick Neumann very carefully in order to fully understand the system of bowings and rhythm patterns. The rhythm and bowing patterns can be employed in a great variety of ways and should be customized to suit each individual player's particular needs.

Including the Galamian scale system as an important part of one's daily practice routine will help develop a sound technical foundation. In order to play scales and arpeggios well it is necessary to have complete control in three areas: the spacing of the hand within one position, the lifting and dropping motion of the fingers, and finally, shifting. There are many fine exercise books by such cellists as Cossmann, Klengel, Feuillard and Starker which are devoted to developing those skills. Those books are all very useful companions to the Galamian scale system.

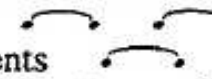
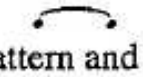
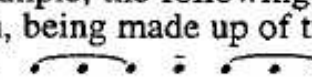
My deepest gratitude and special thanks is given to cellist Edward Goldsmith for his invaluable suggestions and help in proofreading. Thanks also go to cellists Charles Jacot and Andrew Talle for their constructive suggestions. I would also like to thank my cello students at Northwestern University for their helpful comments.

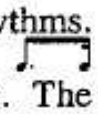
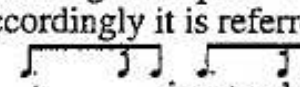
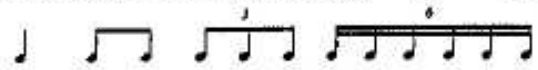
Hans Jørgen Jensen
Northwestern University 1994

PREFACE

Scales and arpeggios are in the Galamian Scale System integrated in an entirely new way with a system of bowing and rhythm patterns. By application to the exercises, the patterns are designed to help the student derive greater and quicker benefit from his scale and arpeggio practice.

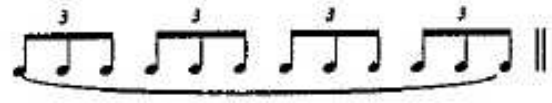
Since technical mastery depends more upon control of mind over muscle than upon mere agility of fingers, the direct way to such mastery lies through working procedures which present a constant challenge to the student's thinking processes. For this reason new problems must always be faced and solved. To provide such new problems in almost inexhaustible supply is the chief purpose of these patterns.

The patterns are in two categories: Bowings (designated by B) and Rhythms (designated by R). Each category is divided into sections, coded B1 to B 16 for bowings, and R1 to R16 for rhythms. The numbers indicate the number of notes in each pattern. For example, the following bowing pattern  is regarded as a two-note pattern, being made up of two-note components  and is therefore listed under B2. The design  is a four-note pattern and appears under B4.

The same principle applies to the Rhythms. The following example derives from the two-note rhythmical figure  . Accordingly it is referred to as a two-note rhythm pattern and is listed under R2. The figure  is a three-note pattern (R3). The figure  is a twelve-note pattern (R12).

The following illustrations derived from Chapter 4, will demonstrate the method of combining the exercises with the patterns. The applicable patterns are:

B1, B2, B3, B4, B6, and B12
R1, R2, R3, R4, R6, and B12

First Primary pattern: 

Example of exercise:

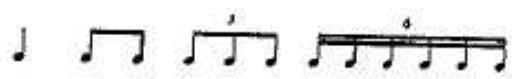
Application of its first primary pattern:

*The guiding idea of this integration is explained in Ivan Galamian's book, *Principles of Violin Playing and Teaching, Prentice-Hall, Inc., Englewwod Cliffs, New Jersey, 1962.*

Application of B3, 2) : with first primary pattern:

Application of R2, 1) a) detache b) legato

Combined with B3, 2) : and R2, 1)

Combined with B4, 3) : and R12, 8) 

At the head of each chapter in this scale book B and R code numbers are listed to indicate the applicable patterns. Primary patterns in which the exercise should first be practiced are also given.

All three-note patterns can be applied to any exercise employing groups of three notes or any of their multiples. In an eight-note exercise, all patterns of B1, B2, B4 and B8 can be combined with all patterns of R1,R2, R4 and R8. In twelve-note exercises, all B and R patterns of 1, 2, 3, 4, 6 and 12 can be combined. This versatility of application permits a single pattern to be used for several different exercises. Innumerable combinations of B and R patterns can be utilized, as well.

To facilitate the use of various bowings, rhythms and their combinations, all note-heads in the exercises are printed without stems. Bowing patterns are shown by note-heads which do not indicate any specific time value, meter or rhythm. Rhythm patterns are presented without any indications for specific bowings.

The teacher will be the best judge of which bowings, rhythms and their combinations will most usefully serve the needs of each student. It is suggested that the patterns be utilized in a diversified fashion and that the rhythms and bowings be employed in constantly changing combinations to stimulate continuous interest.

We hope this approach to the problems of contemporary cello technique will provide interesting and profitable results for both teacher and student.

Ivan Galamian

Frederick Neumann

Additions and Changes to the Violoncello Edition from the Original Version of Contemporary Violin Technique By Ivan Galamian and Frederick Neumann

The Violoncello Edition has been organized into a format more suitable for the cello. The following changes have therefore been necessary:

1. Chapters 1, 2 and 3 have been added in order to give less experienced players an introduction to scale and arpeggio study. The keys in these chapters have been arranged in the order of the circle of fifths so as to provide a basic understanding of key relationships for the younger player. This will serve as a preparation for learning the three and four octave studies in subsequent chapters.

2. Chapter 5, *Broken Thirds in Three-Octaves* and Chapter 8, *Chromatic Scales in Four-Octaves* have been added in an effort to make this book more comprehensive.

3. Chapter 9, *Four-Octave Arpeggios* has been expanded from the original four to include eight arpeggios in each key. Unlike the original violin version however, the cello edition includes the fifth scale degree in all diminished seventh and dominant seventh chords. As a result these arpeggios contain sixteen notes rather than the usual twelve notes found in the other chords. The addition of the fifth scale degree also applies in Chapter 6, *Three-Octave Arpeggios*.

The Violoncello Edition has been organized into six (6) broad sections — Two-Octave Studies, Three-Octave Studies, Four-Octave Studies, Studies in One Position, Studies on One String and Unusual Scales and Arpeggios.

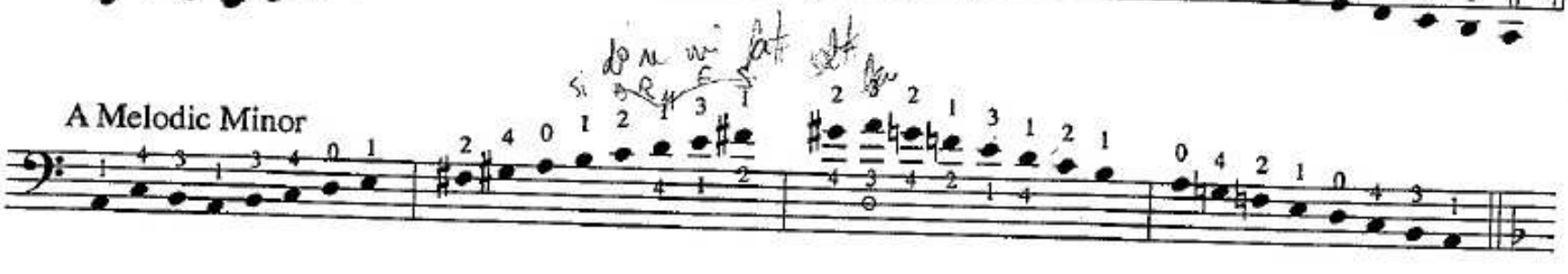
1
Scales in Two Octaves

Groups of eight notes. PATTERNS: ***B1, B2, B4, B8, B16***
R1, R2, R4, R8, R16

Primary Patterns:

Two octave scales should also be studied as acceleration exercises 2, 4, 8, 16 and 32 notes to the bow. For an explanation of acceleration exercises please turn to page 11.

C Major

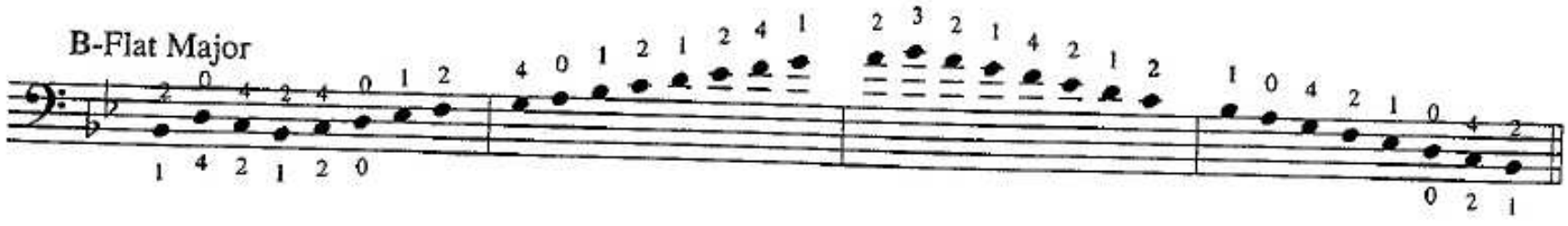


A Melodic Minor

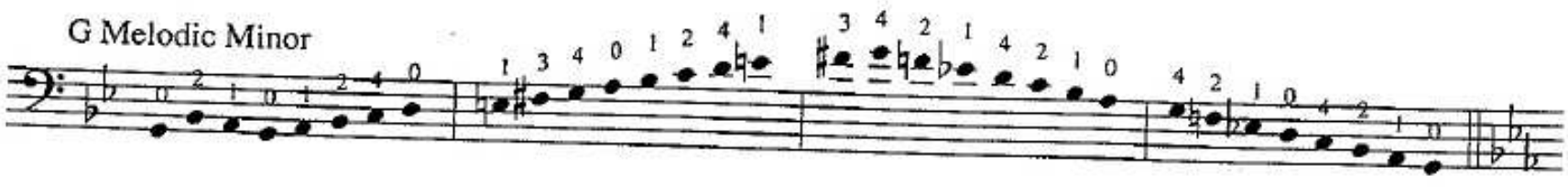
F Major

D Melodic Minor

B-Flat Major



G Melodic Minor



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E-Flat Major

C Melodic Minor

A-Flat Major

F Melodic Minor

D-Flat Major

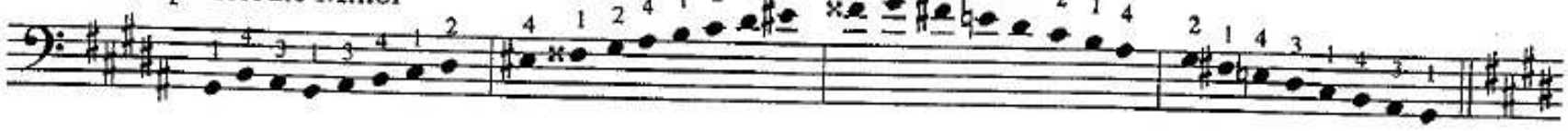
B-Flat Melodic Minor

G-Flat Major

E-Flat Melodic Minor

B Major

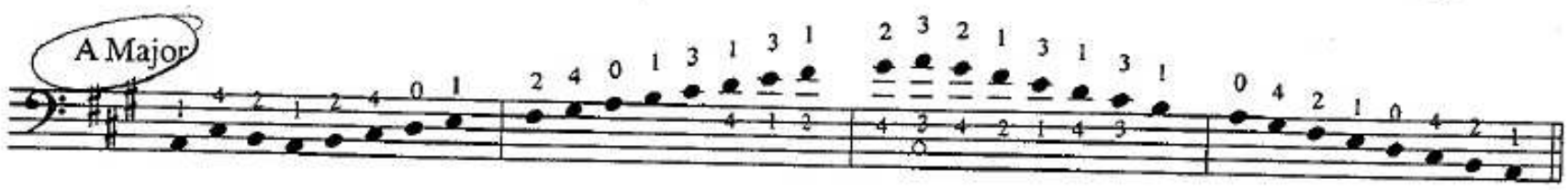
G-Sharp Melodic Minor



E Major

C-Sharp Melodic Minor

A Major



F-Sharp Melodic Minor

D Major

B Melodic Minor

G Major

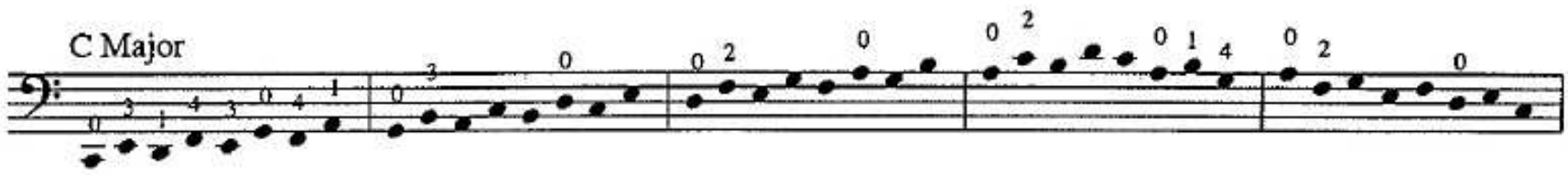
E Melodic Minor

2
Broken Thirds In Two Octaves

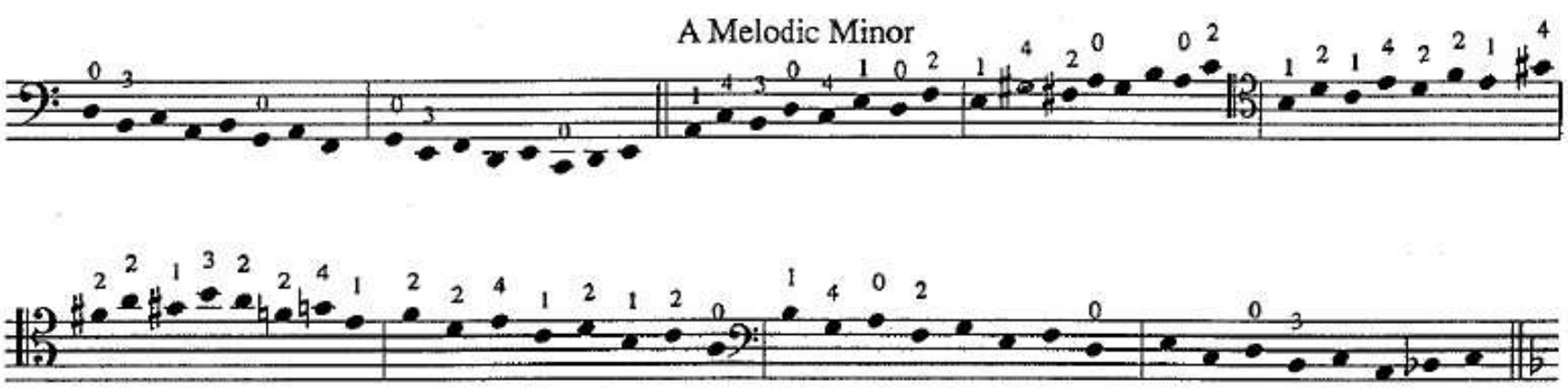
Groups of eight notes. PATTERNS: ***B1, B2, B4, B8***
R1, R2, R4, R8

Primary Patterns:

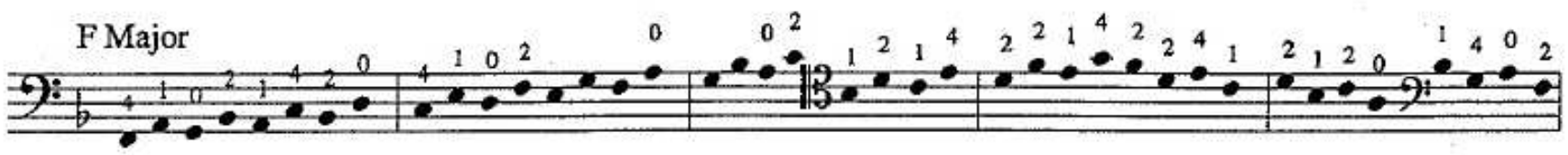
C Major



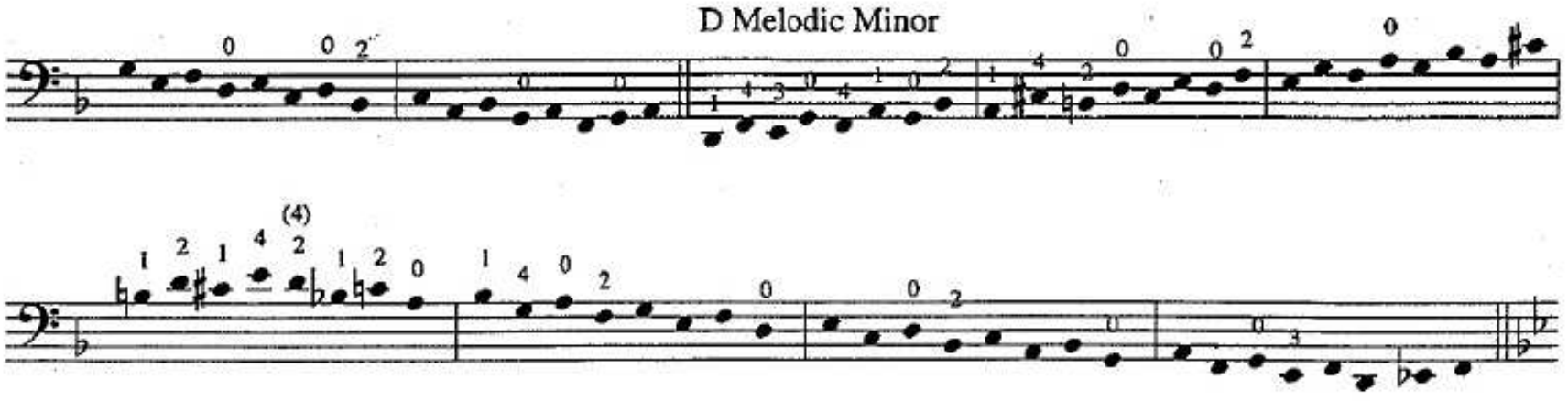
A Melodic Minor



F Major



D Melodic Minor



B-Flat Major

G Melodic Minor

E-Flat Major

C Melodic Minor

A-Flat Major

F Melodic Minor

D-Flat Major

B-Flat Melodic Minor

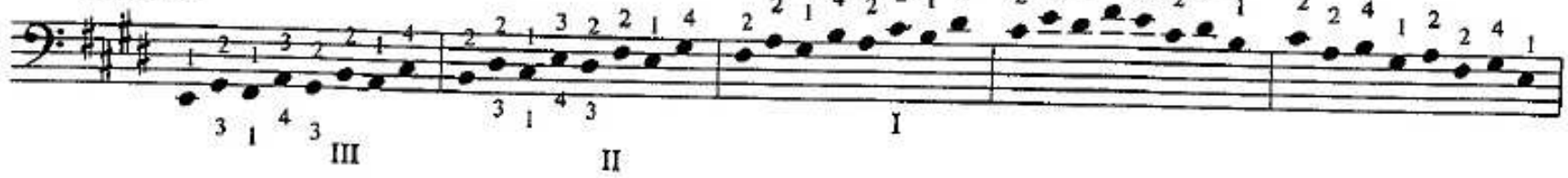
F-Sharp Major

D-Sharp Melodic Minor

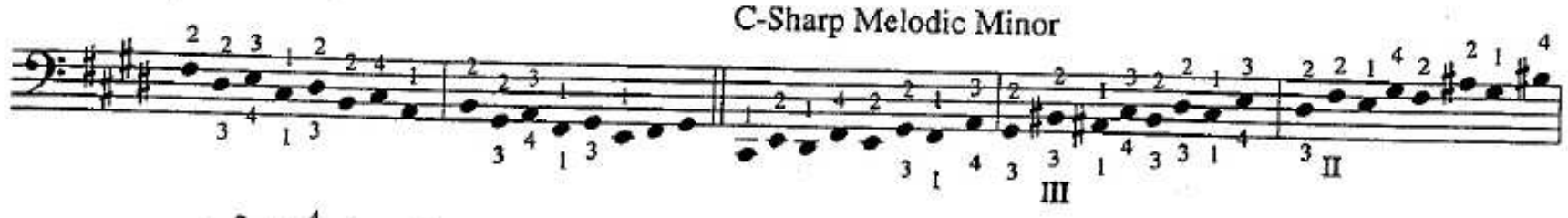
B Major

G-Sharp Melodic Minor

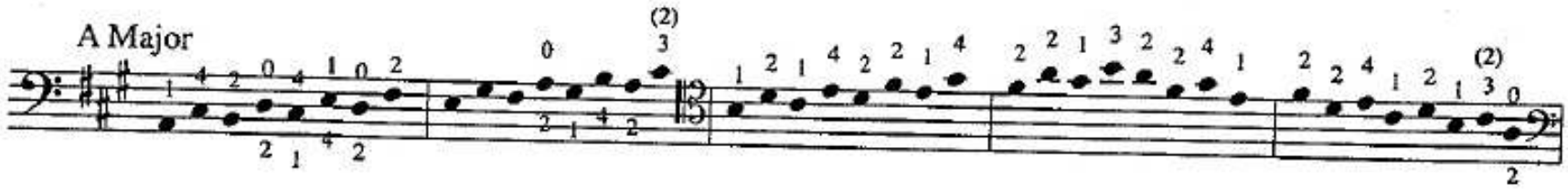
E Major



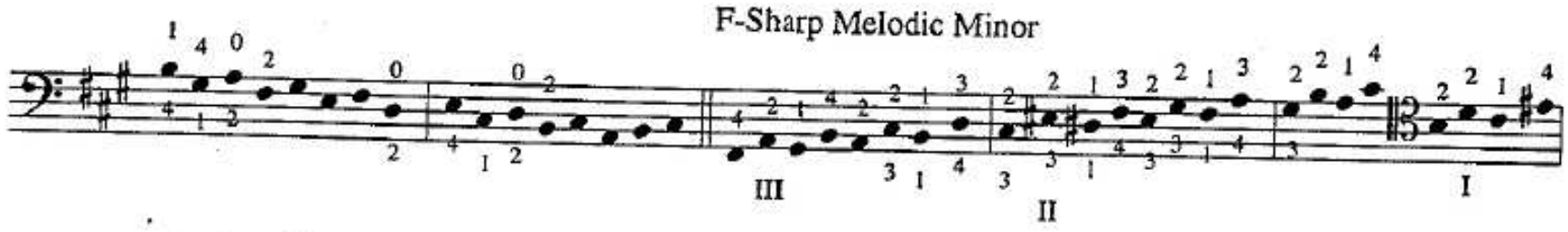
C-Sharp Melodic Minor

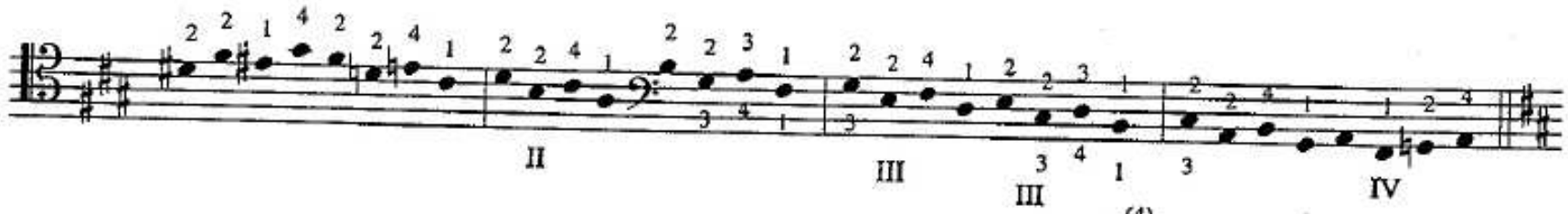


A Major

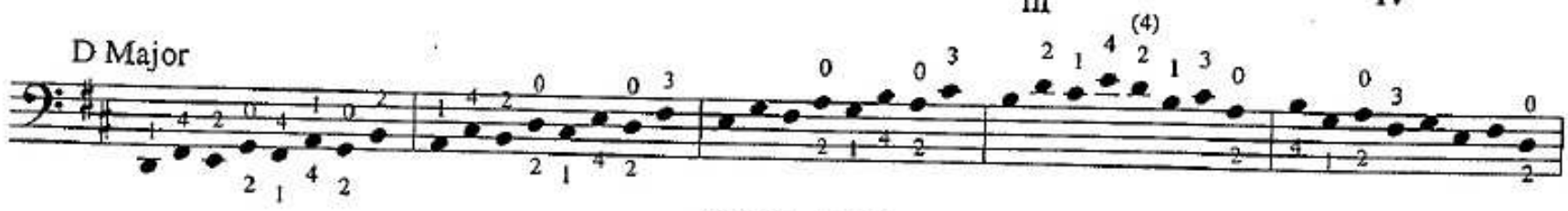


F-Sharp Melodic Minor

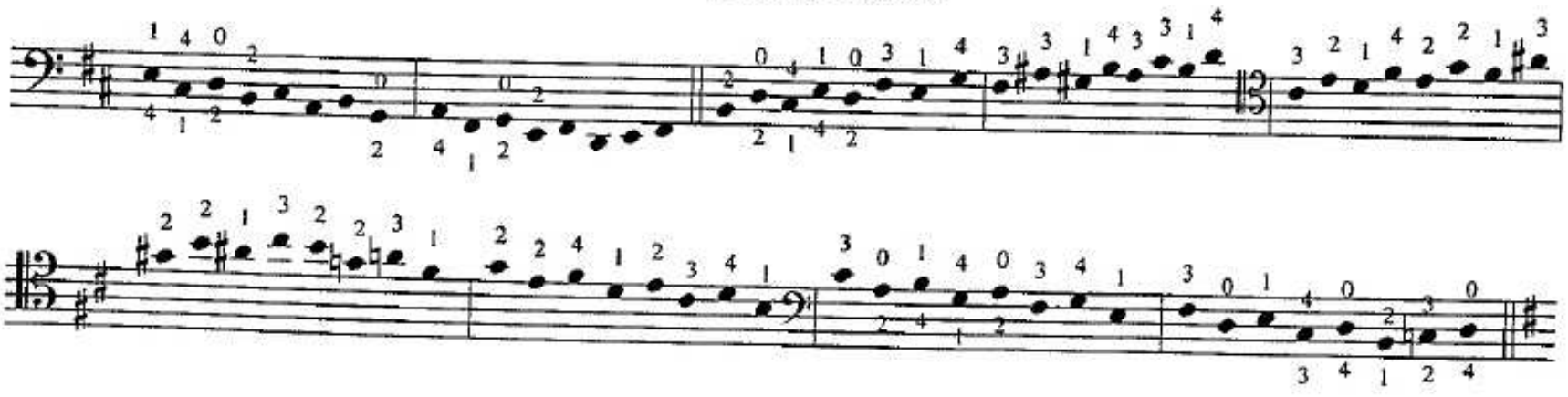




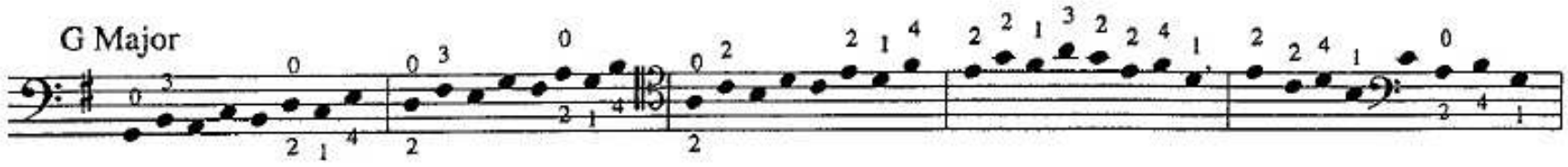
D Major



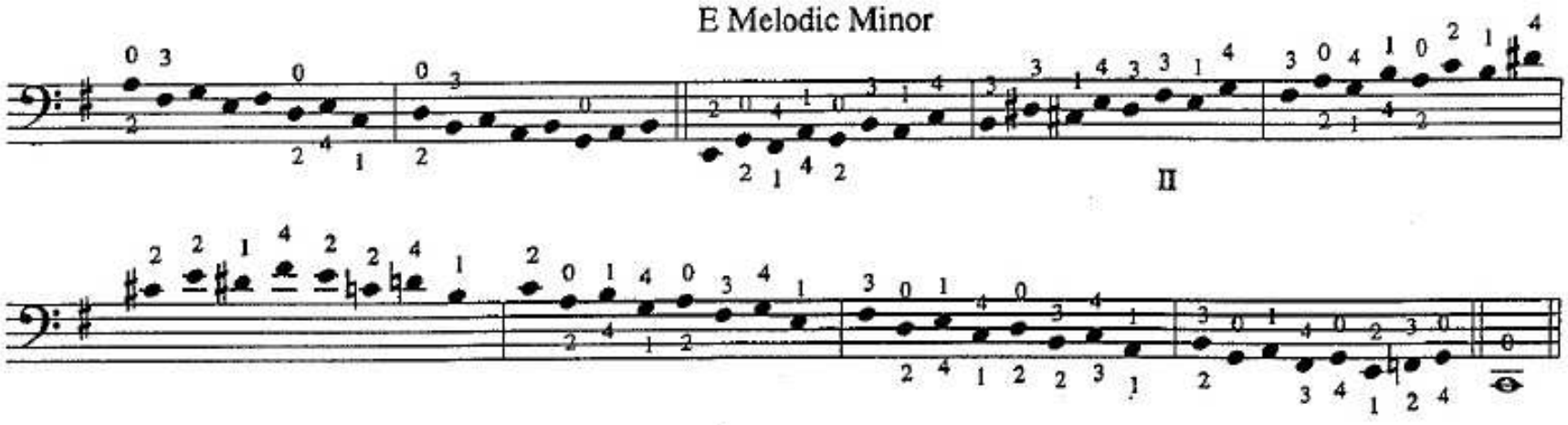
B Melodic Minor



G Major



E Melodic Minor

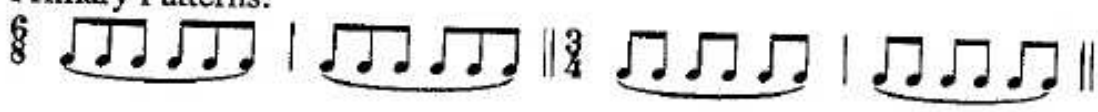


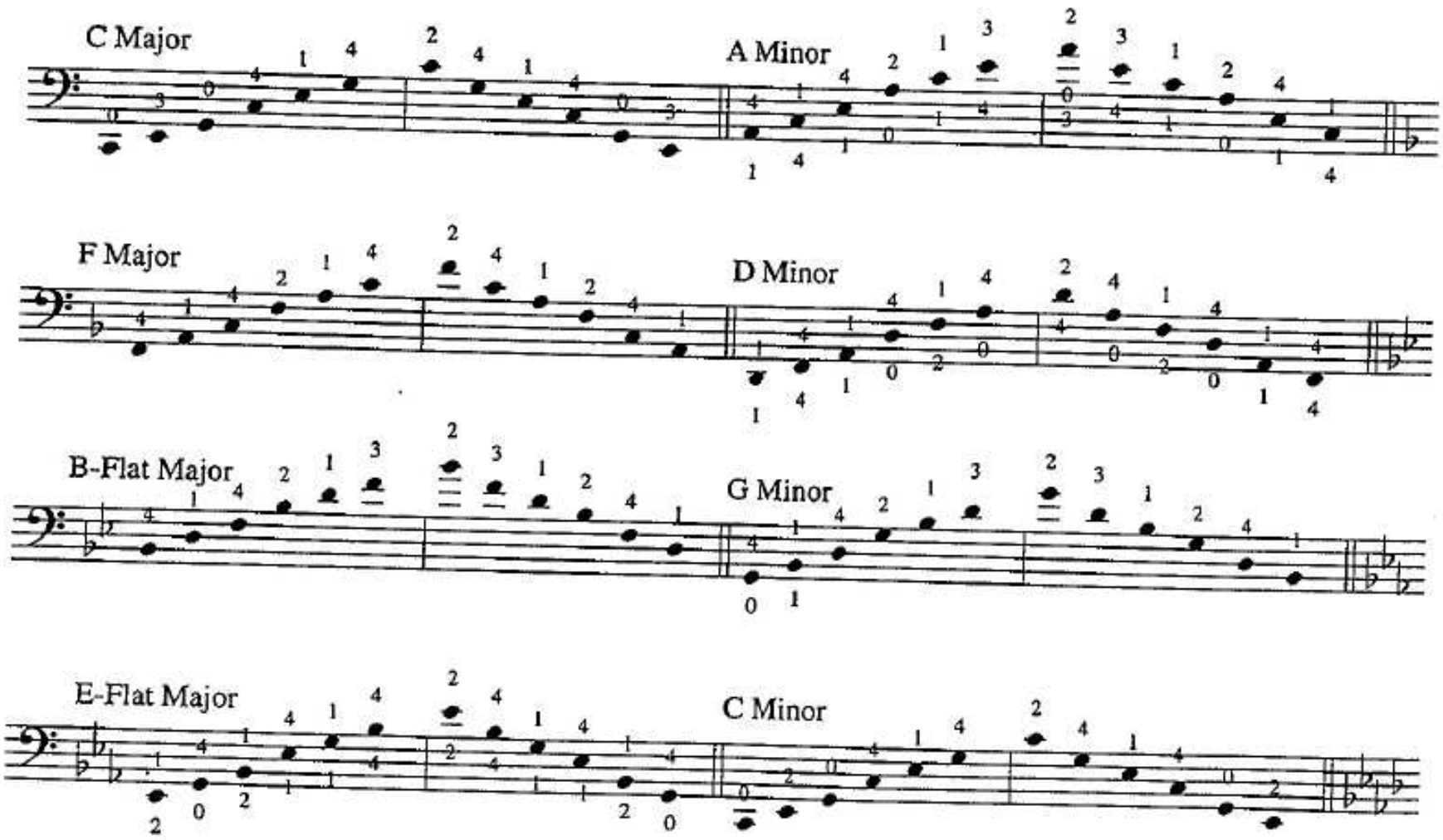
3

Arpeggios In Two Octaves

Groups of six notes. PATTERNS: ***B1, B2, B3, B6***
R1, R2, R3, R6

Primary Patterns:





A-Flat Major

F Minor

D-Flat Major

B-Flat Minor

F-Sharp Major

D-Sharp Minor

B Major

G-Sharp Minor

IV

E Major

C-Sharp Minor

A Major

F-Sharp Minor

D Major

B Minor

G Major

E Minor

≠ metrônomo = manco

= metrônomo [illegible] funciona

♩= 43

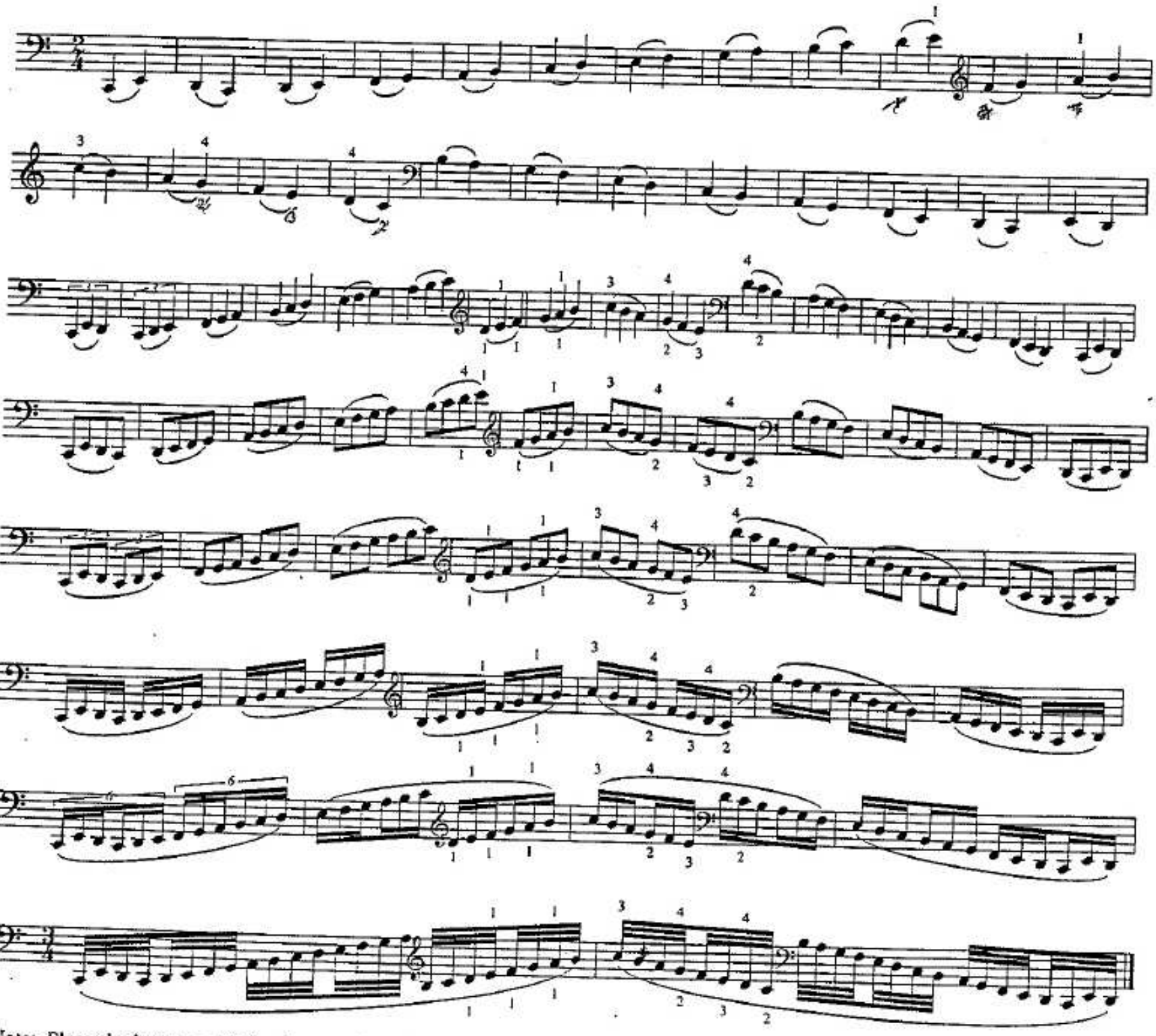
4
Three-Octave Scales

mudança de posição instantânea!

Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

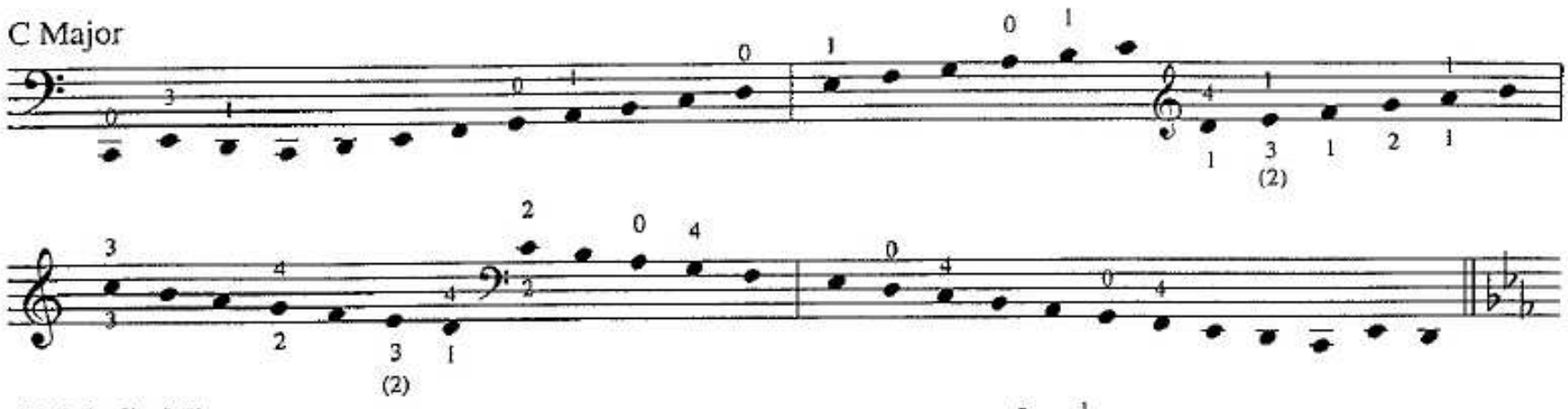
Primary Patterns:

In addition to these patterns, practice all three-octave scales with the *Acceleration Exercise* as shown in the following example. Make sure the value of the quarter note remains the same throughout. Choose a slow tempo at first (♩ = 50-60), then gradually increase it. The exercise may also be practiced in reverse as a *Retardation Exercise* by starting at the end with the thirty-second notes and finishing with the quarter notes.

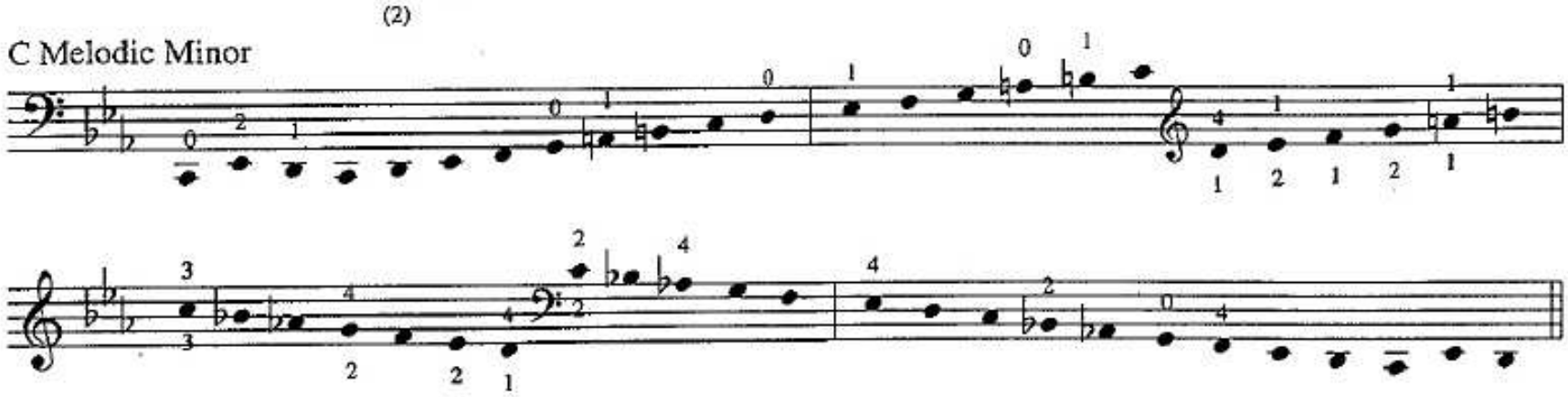


Note: Please look at page 19 for alternate fingering systems for the three octave scales.

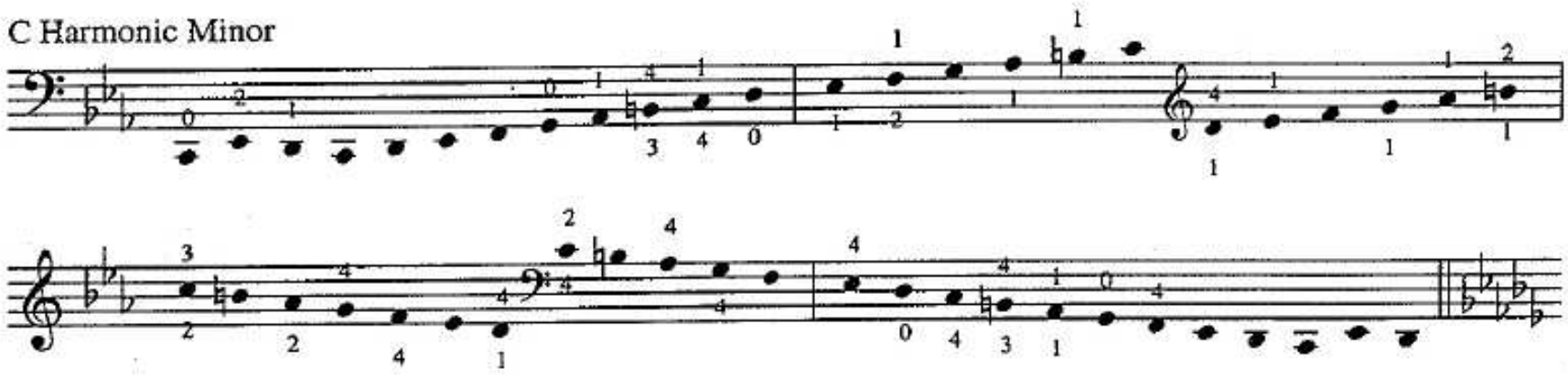
C Major



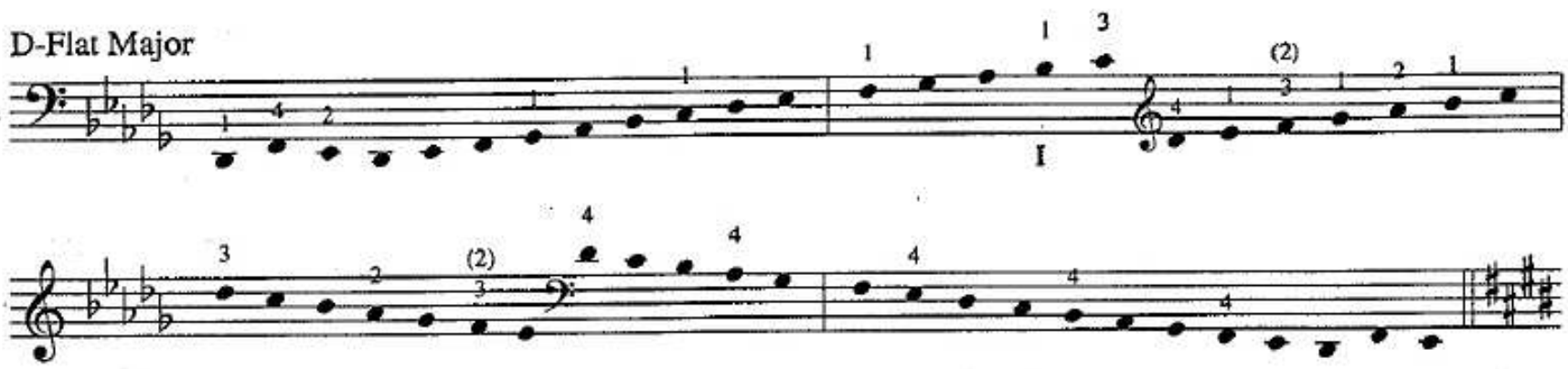
C Melodic Minor



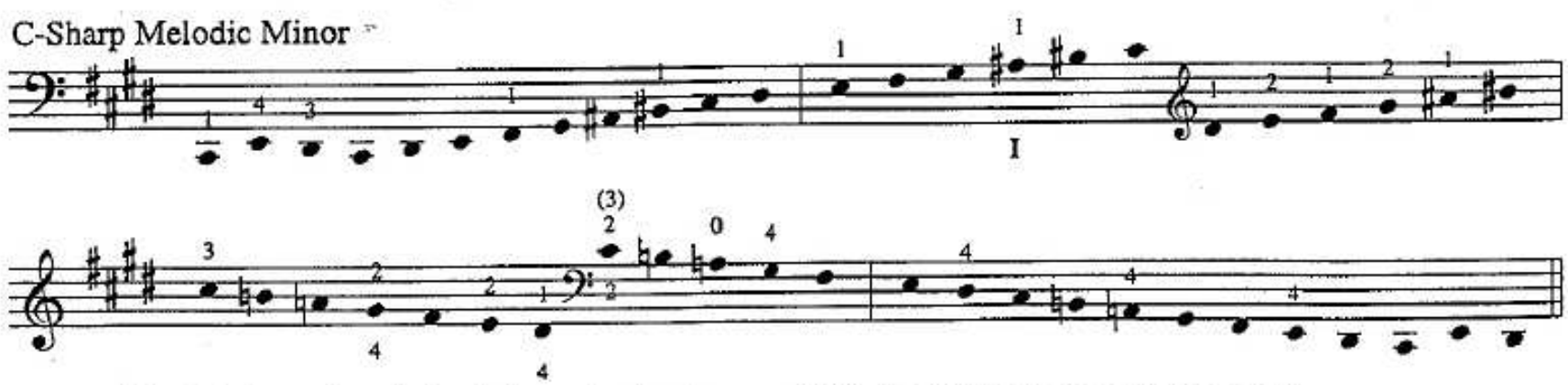
C Harmonic Minor



D-Flat Major

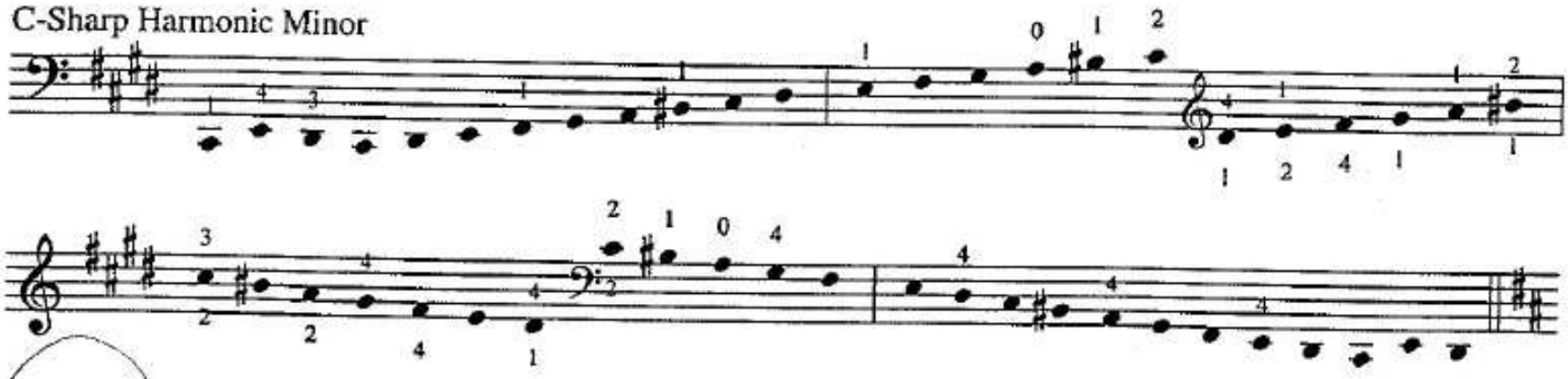


C-Sharp Melodic Minor

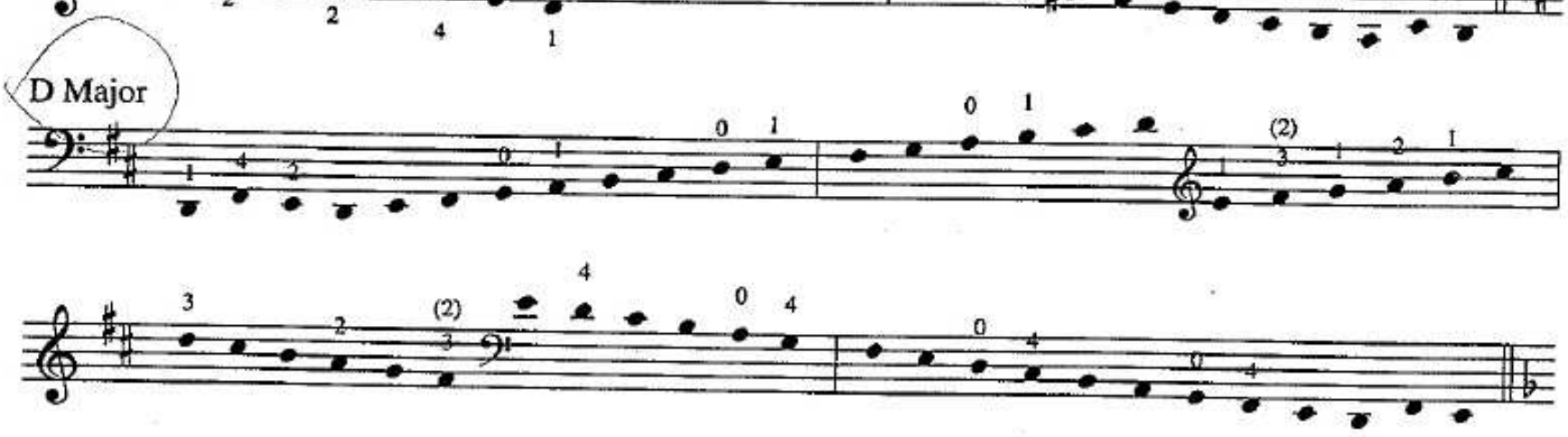


Note: The lower fingering in the harmonic minor keys avoids the large stretch between the 6th and 7th degree of the scale. This fingerings is more suitable for cellists with smaller hands.

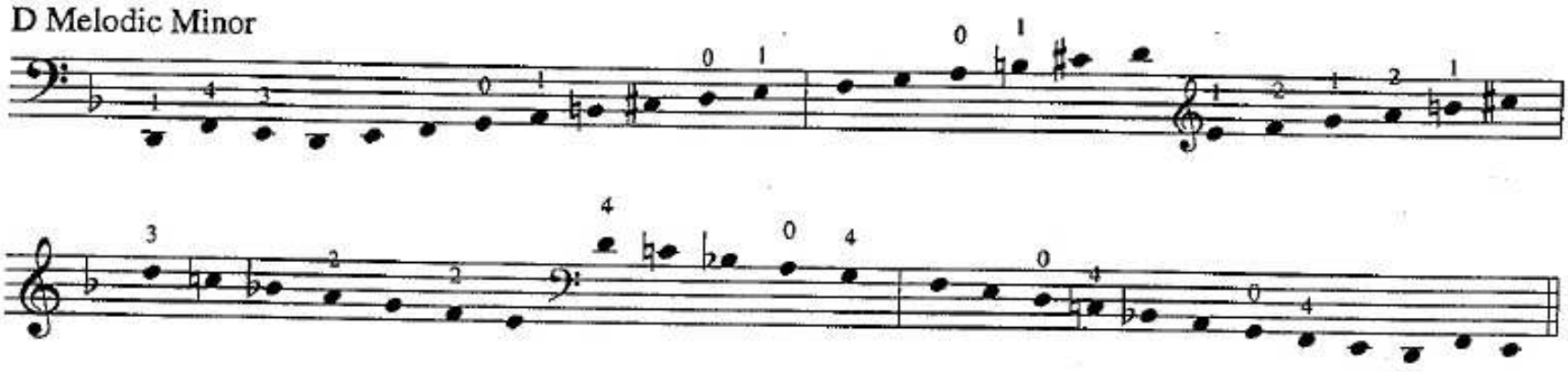
C-Sharp Harmonic Minor



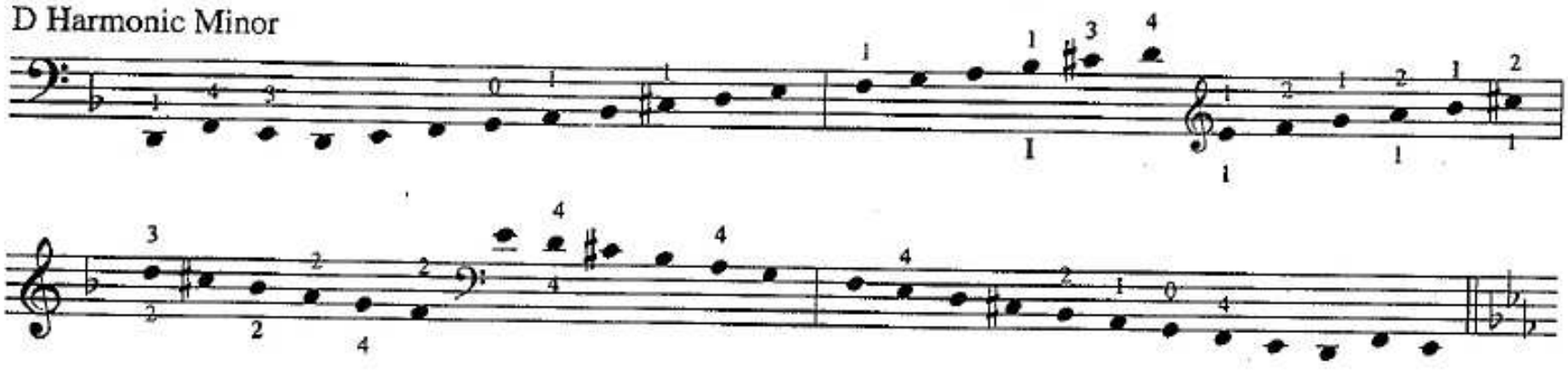
D Major



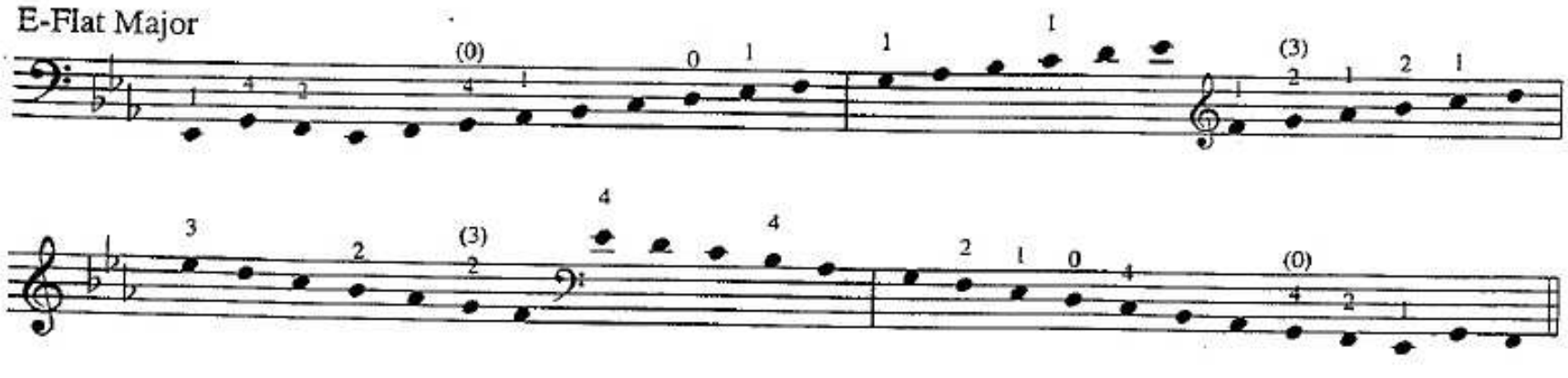
D Melodic Minor



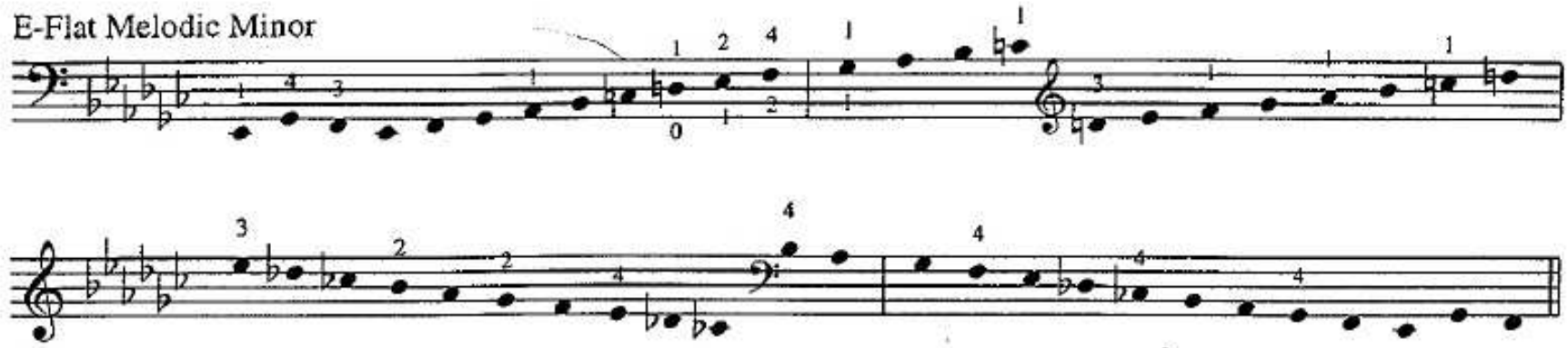
D Harmonic Minor



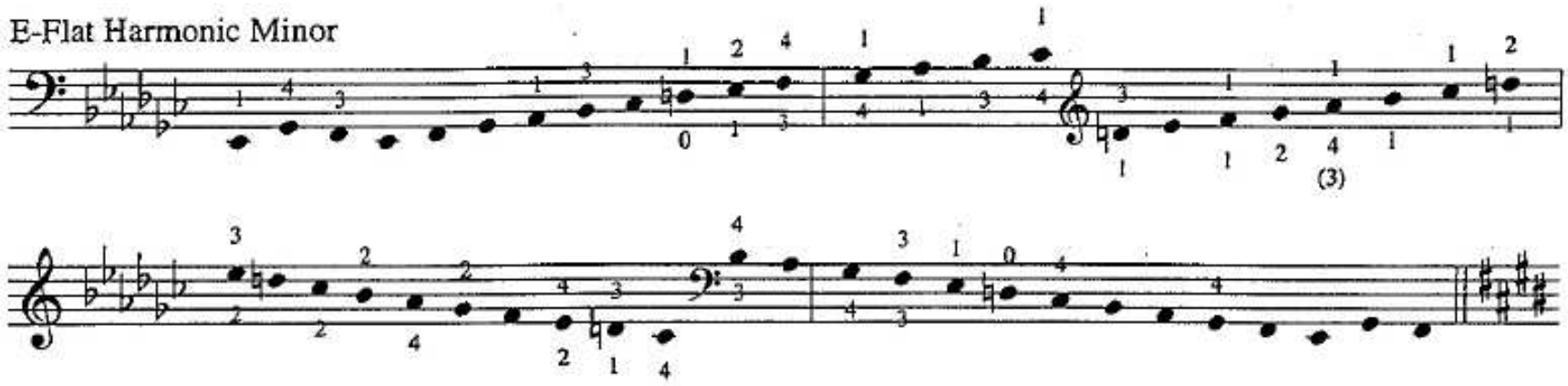
E-Flat Major



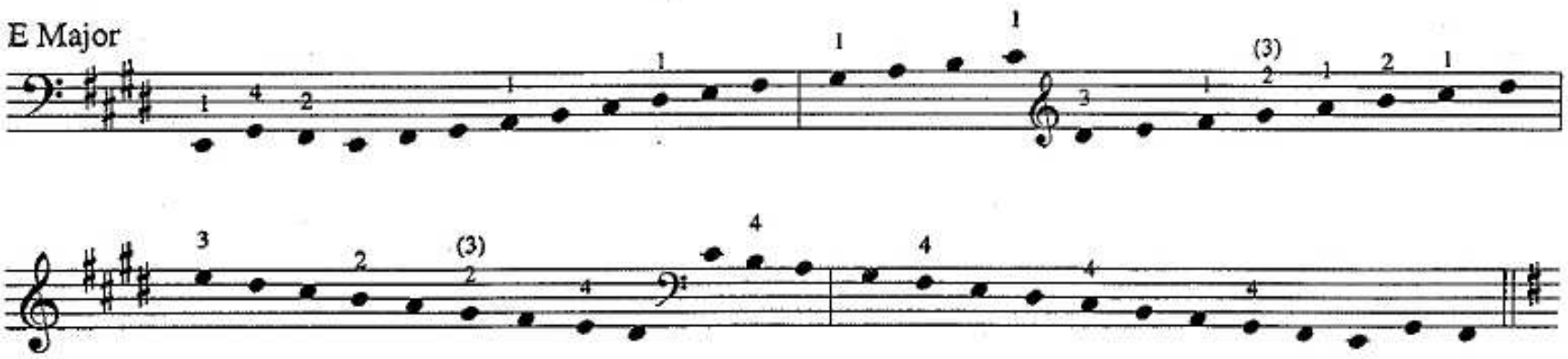
E-Flat Melodic Minor



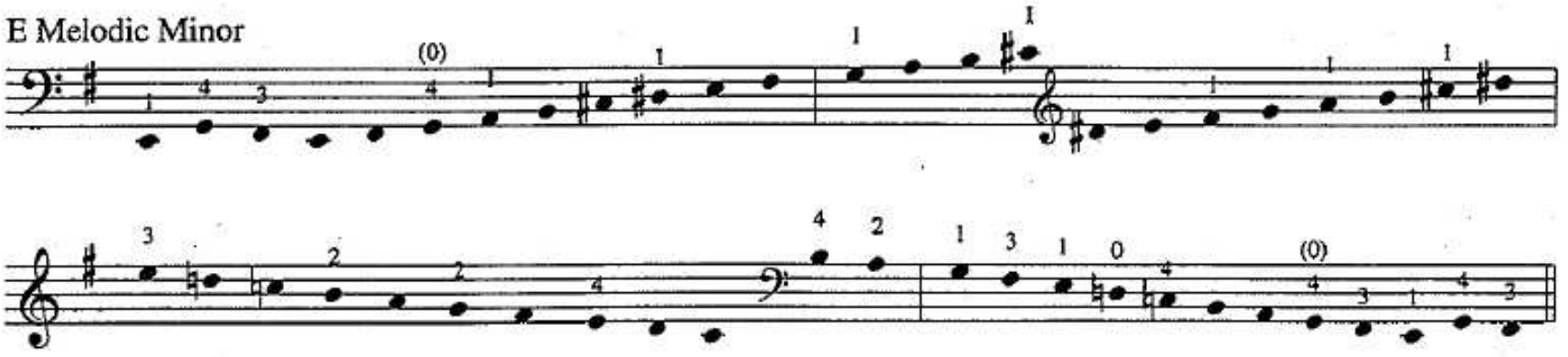
E-Flat Harmonic Minor



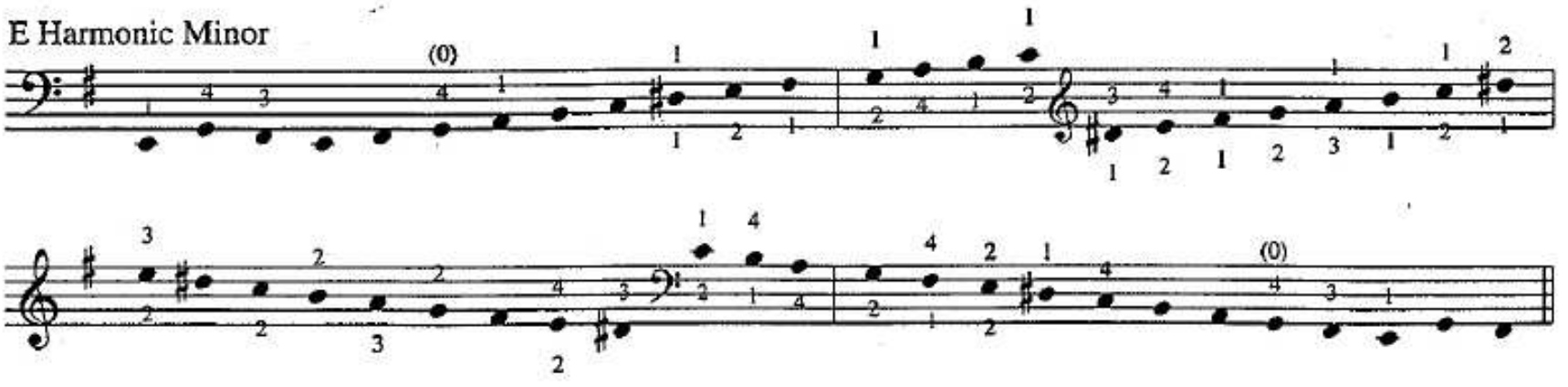
E Major



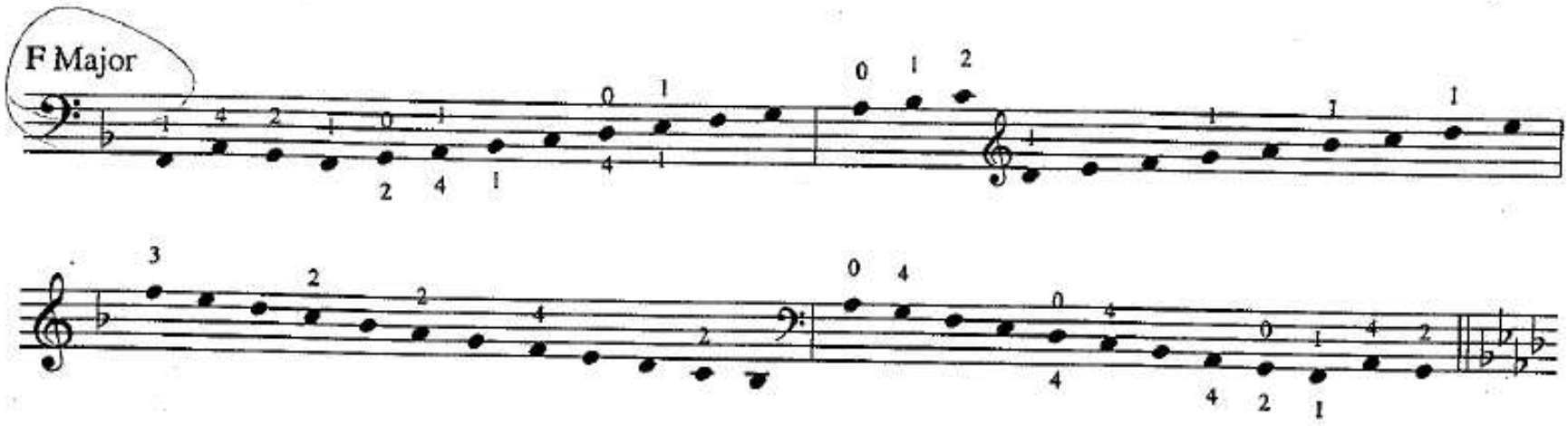
E Melodic Minor



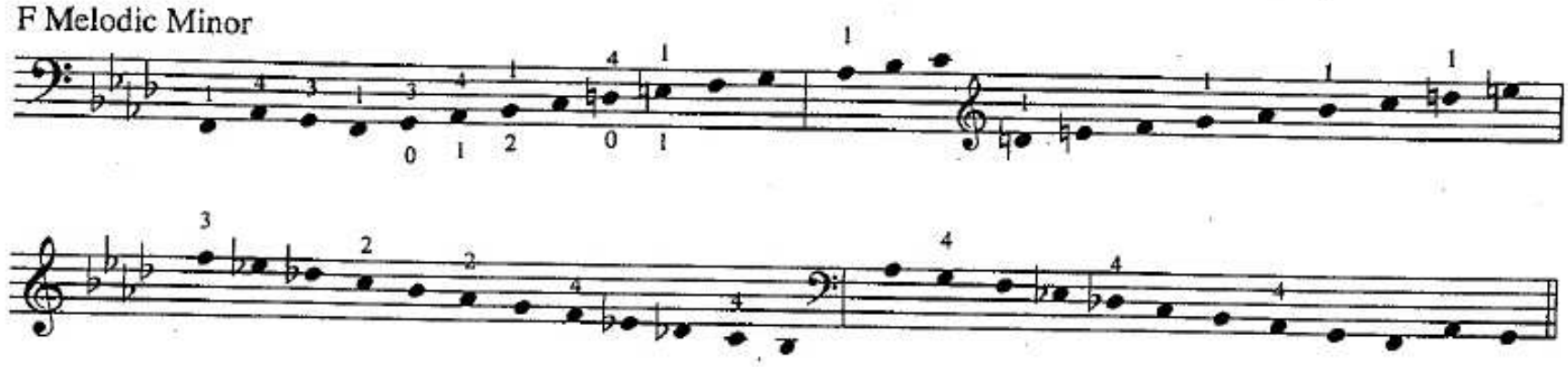
E Harmonic Minor



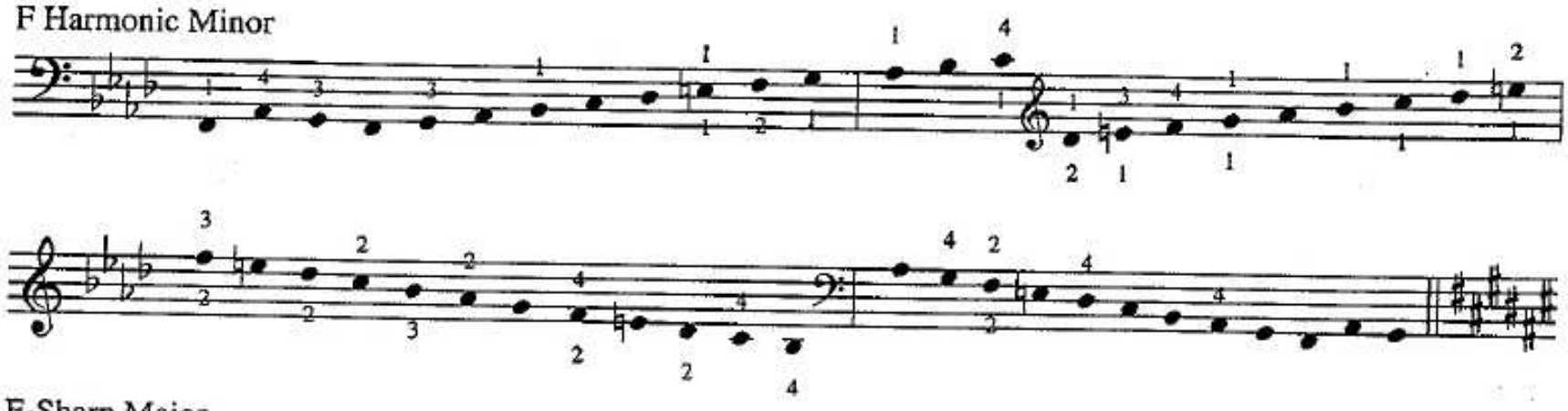
F Major



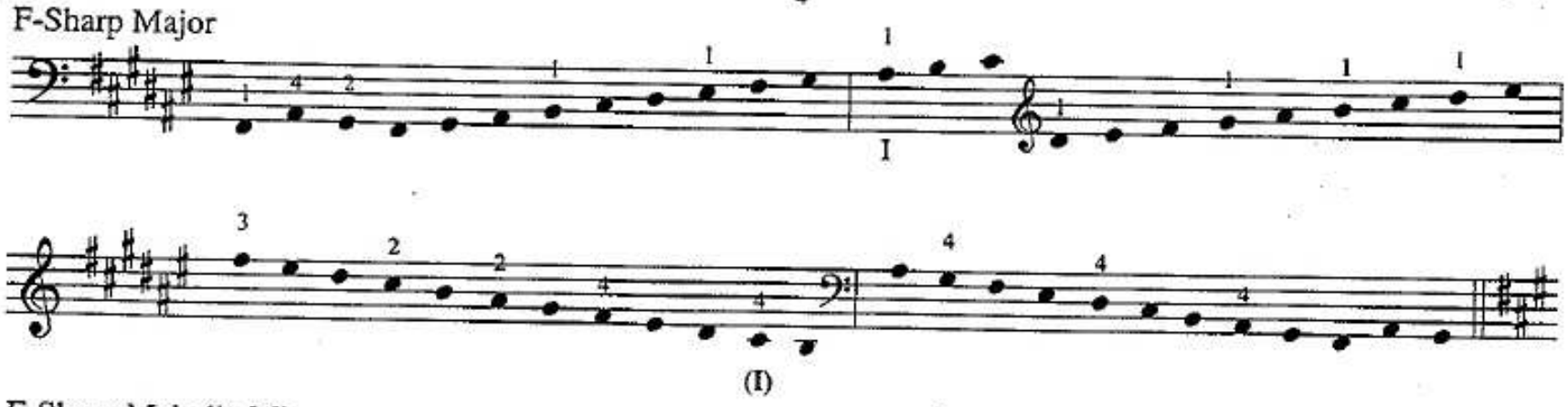
F Melodic Minor



F Harmonic Minor

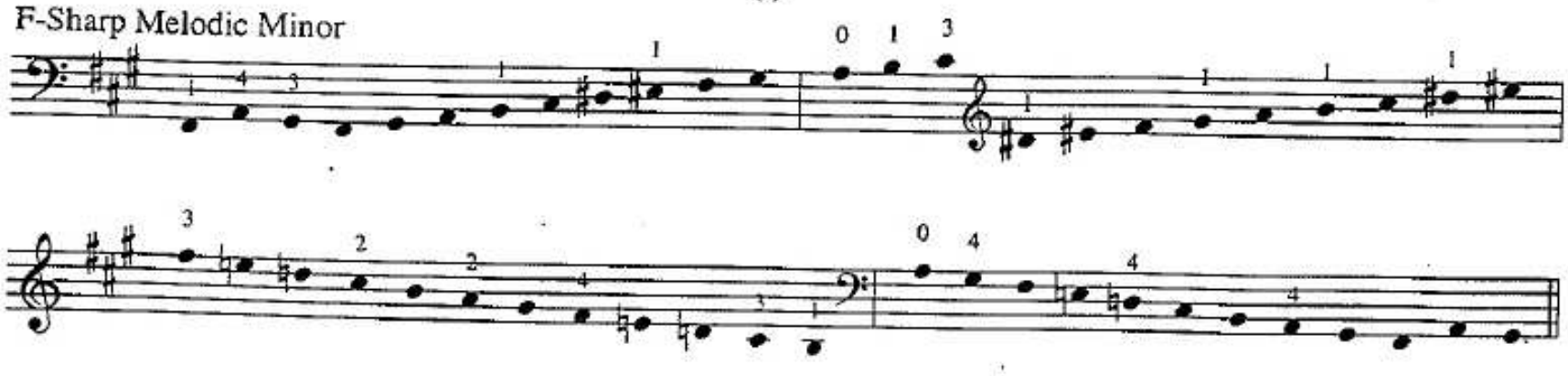


F-Sharp Major

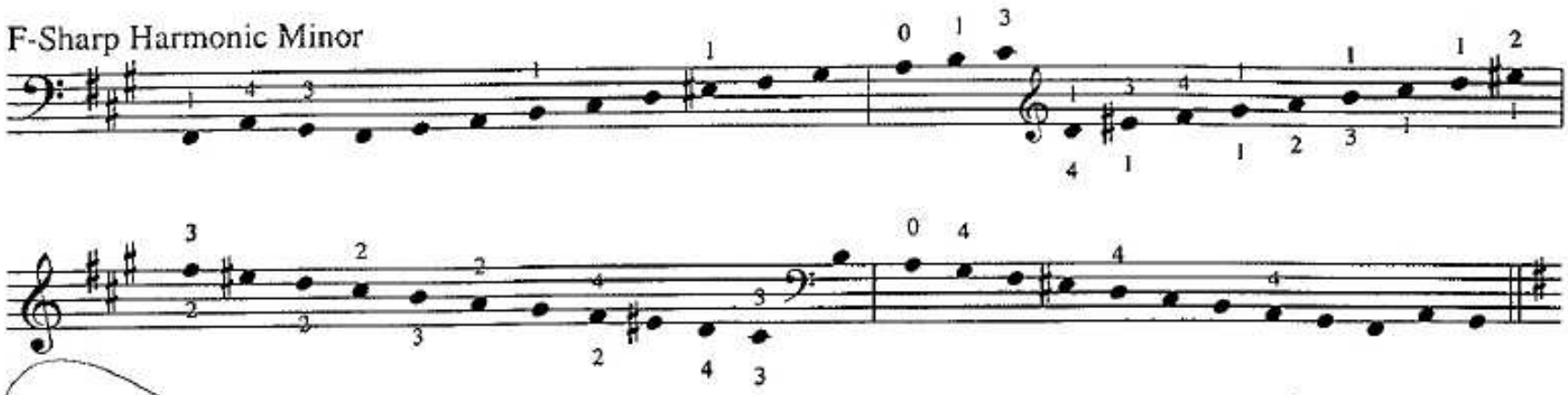


(I)

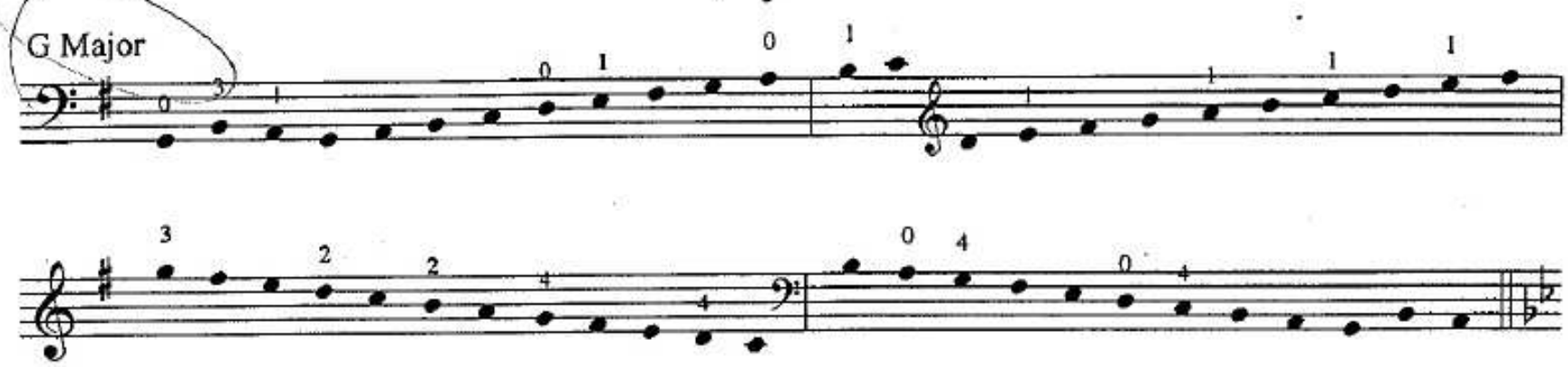
F-Sharp Melodic Minor



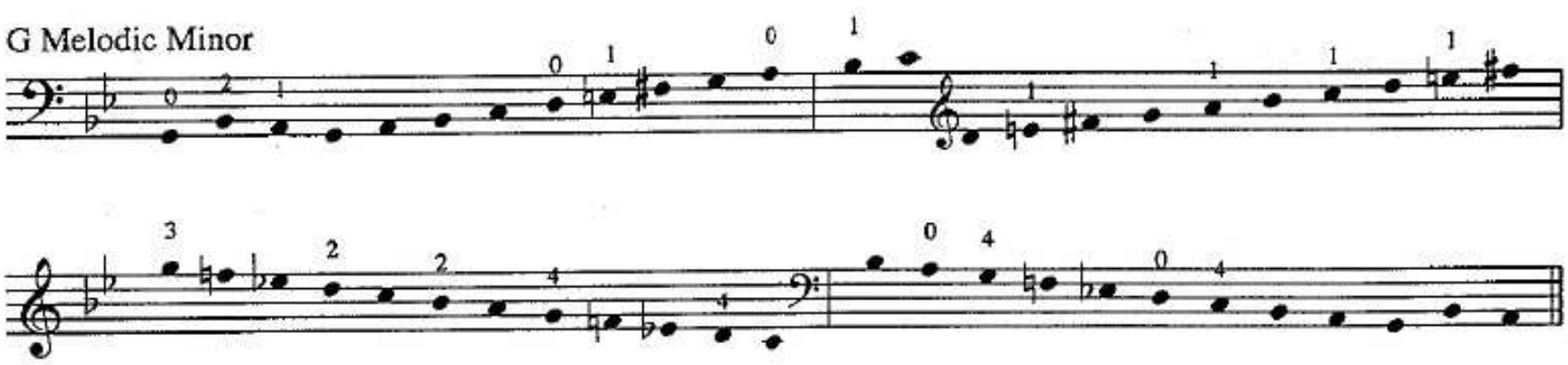
F-Sharp Harmonic Minor



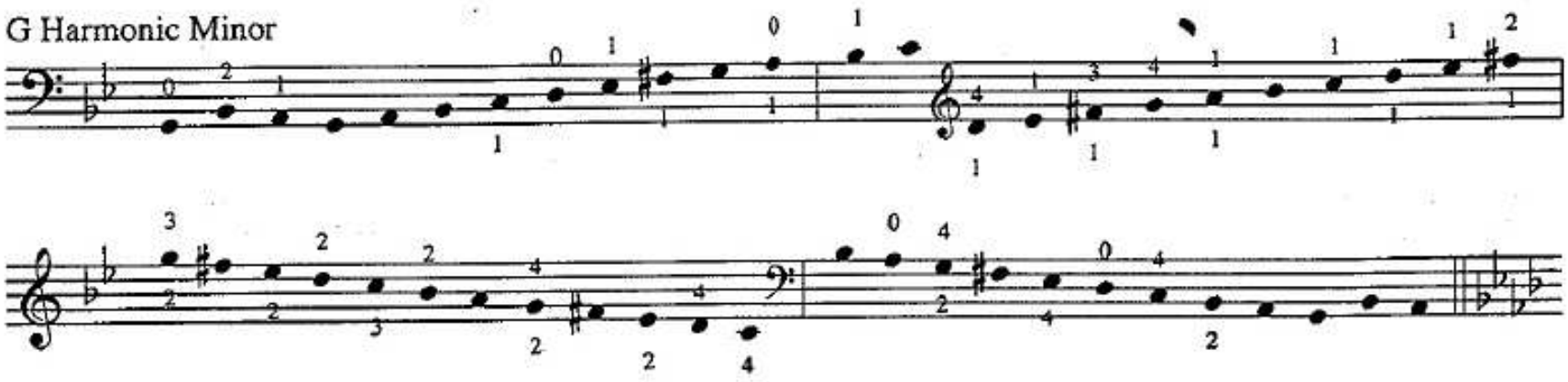
G Major



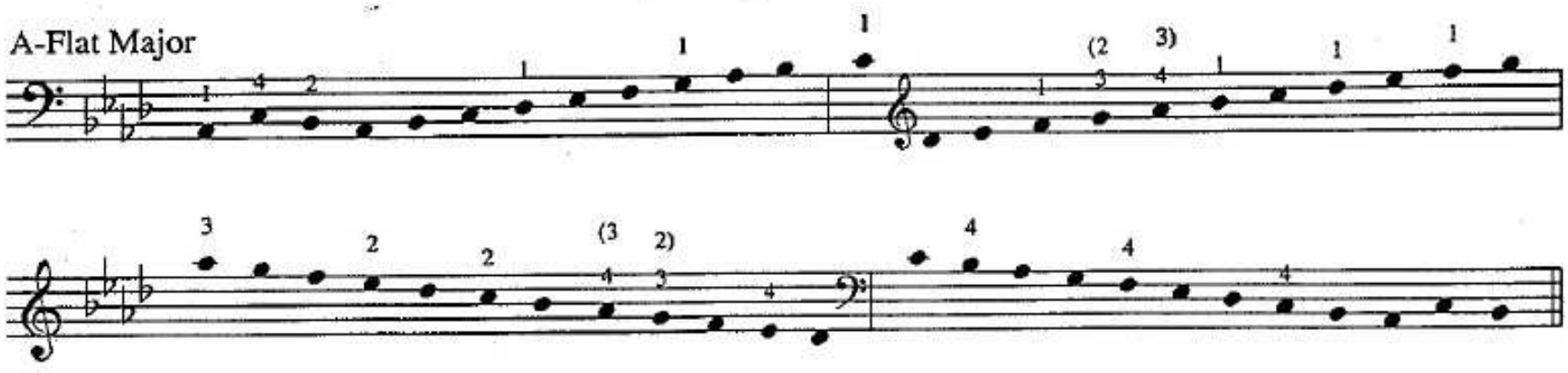
G Melodic Minor



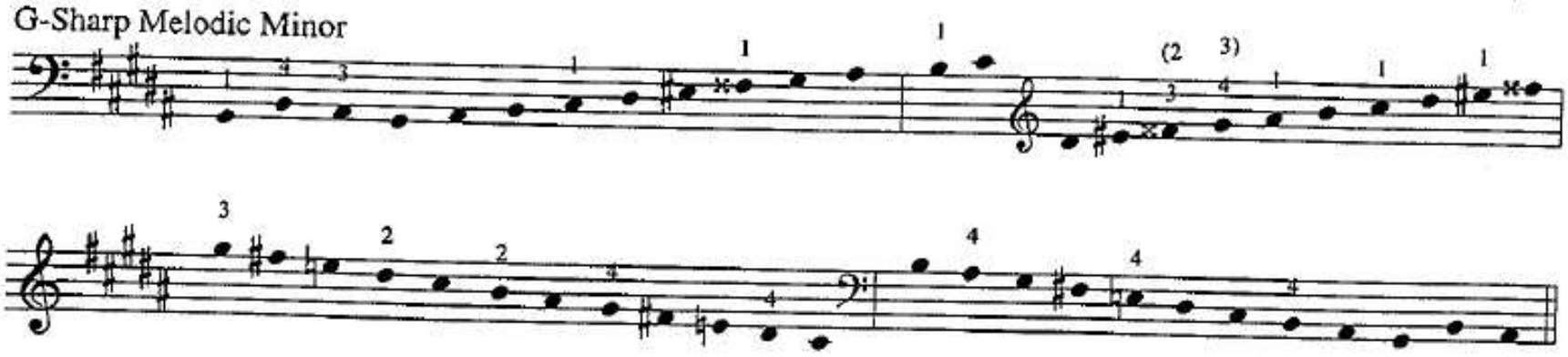
G Harmonic Minor



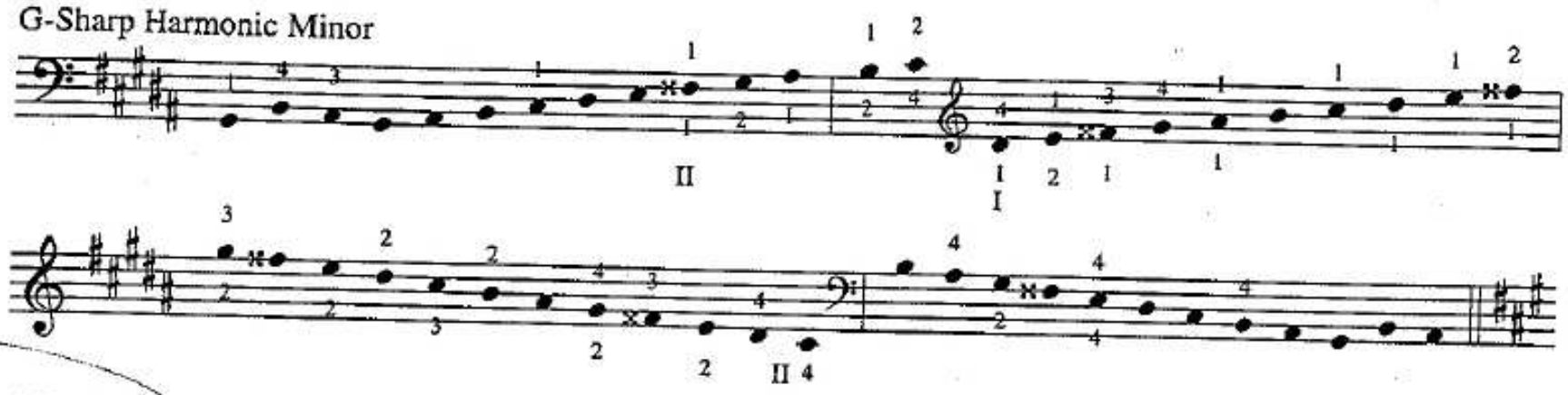
A-Flat Major



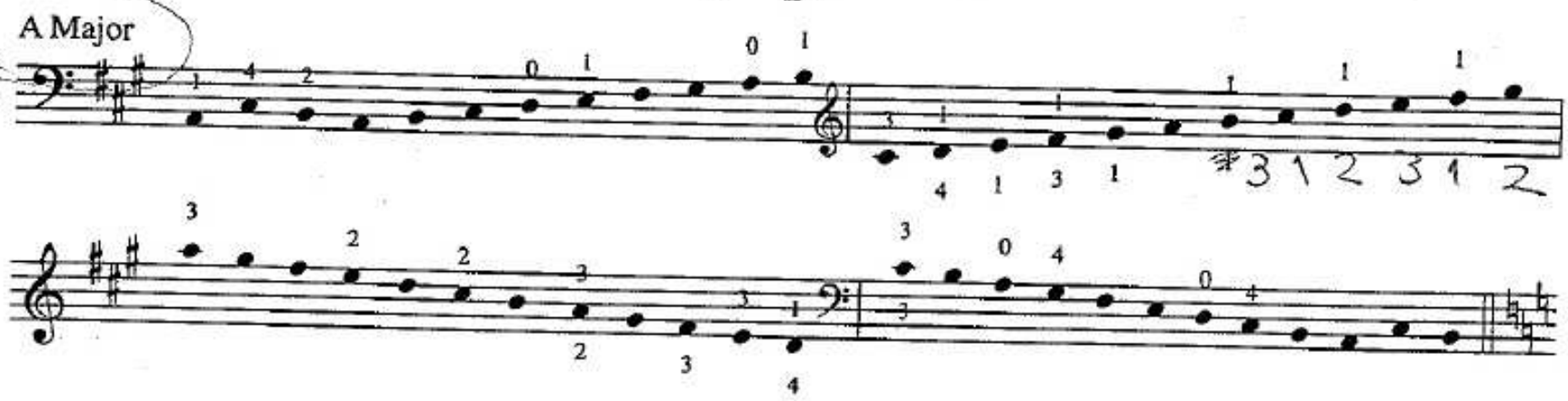
G-Sharp Melodic Minor



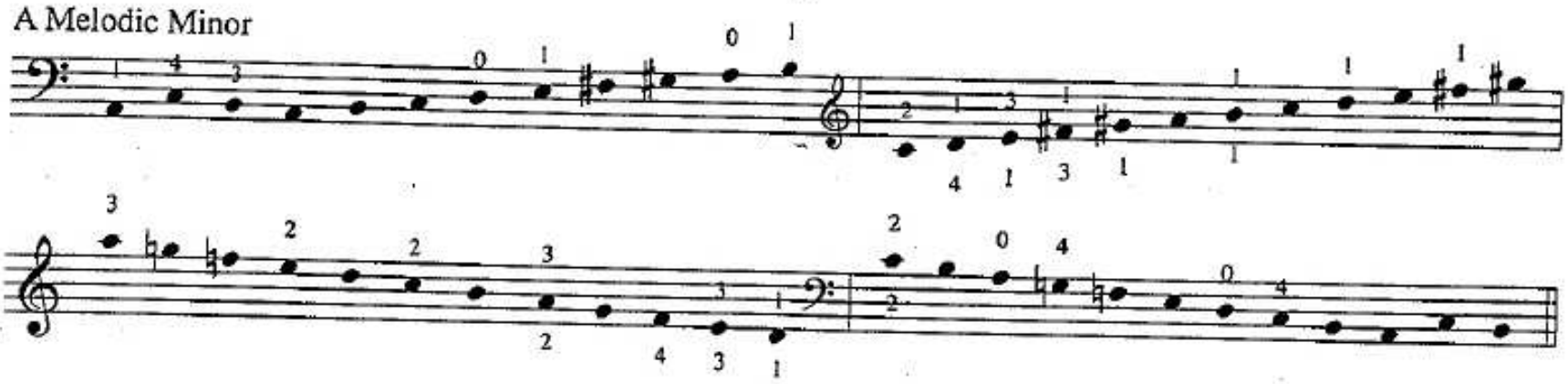
G-Sharp Harmonic Minor



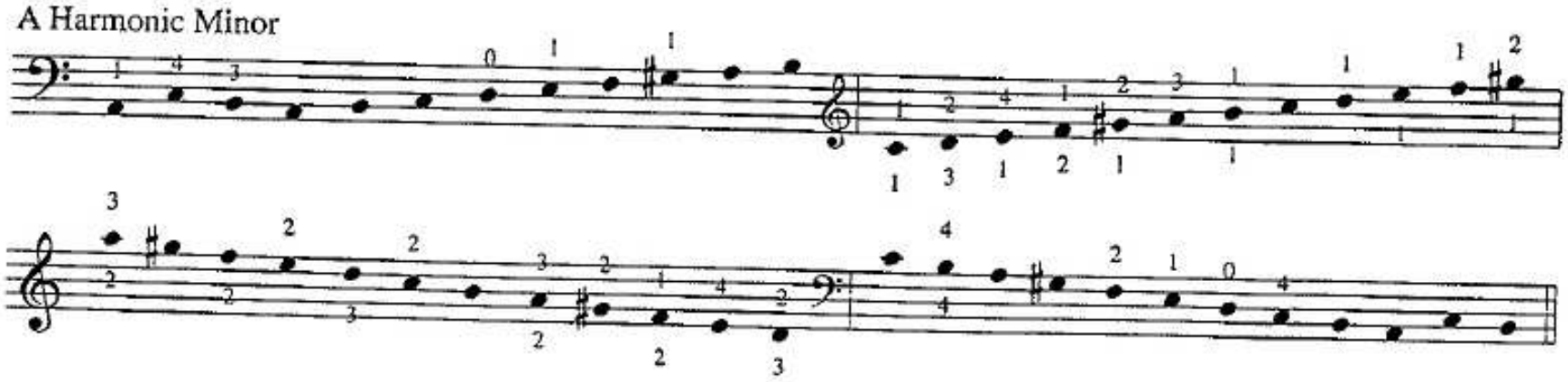
A Major



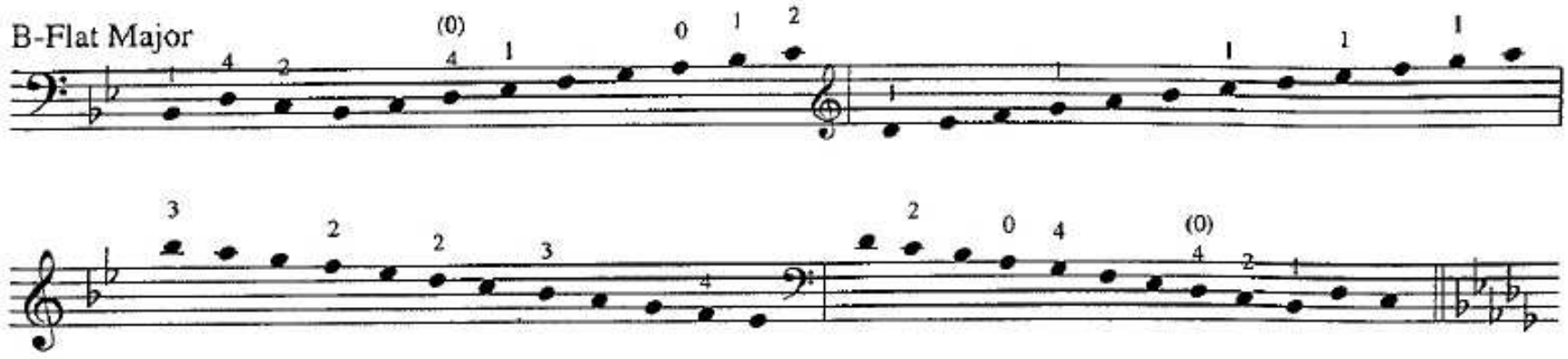
A Melodic Minor



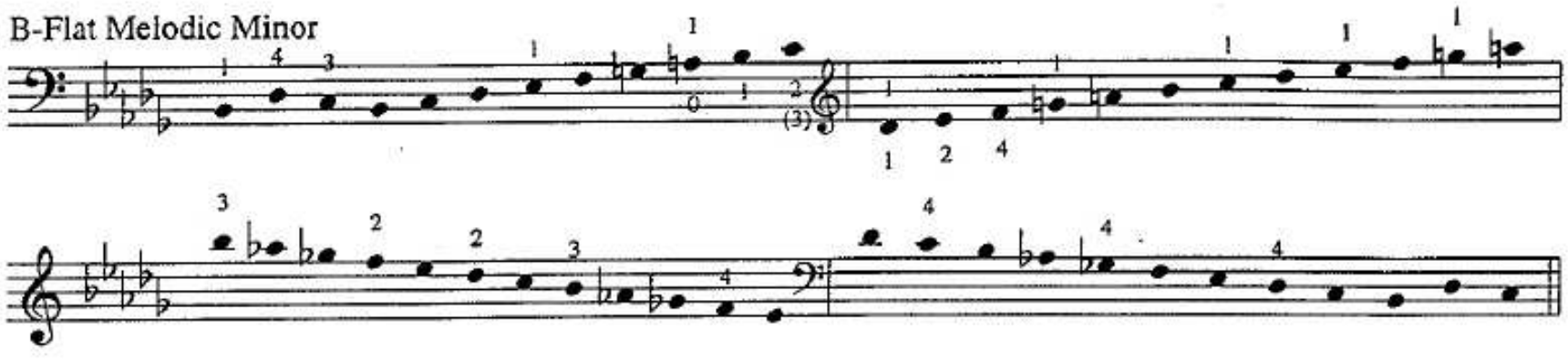
A Harmonic Minor



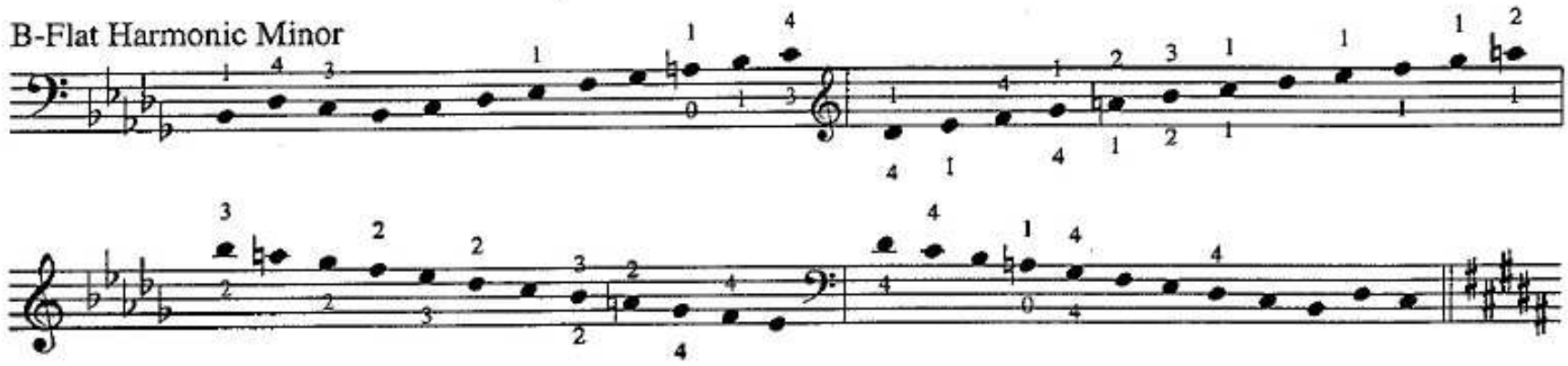
B-Flat Major



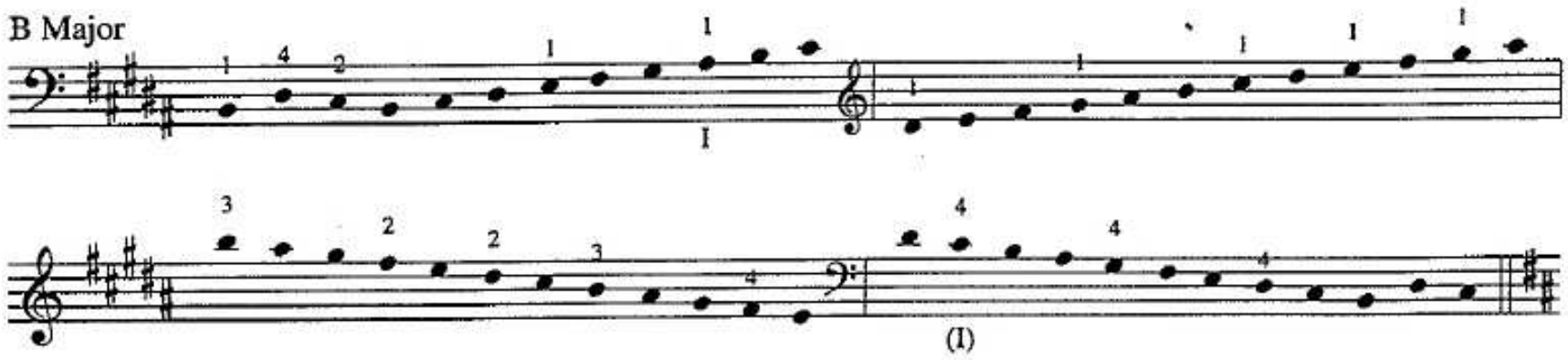
B-Flat Melodic Minor



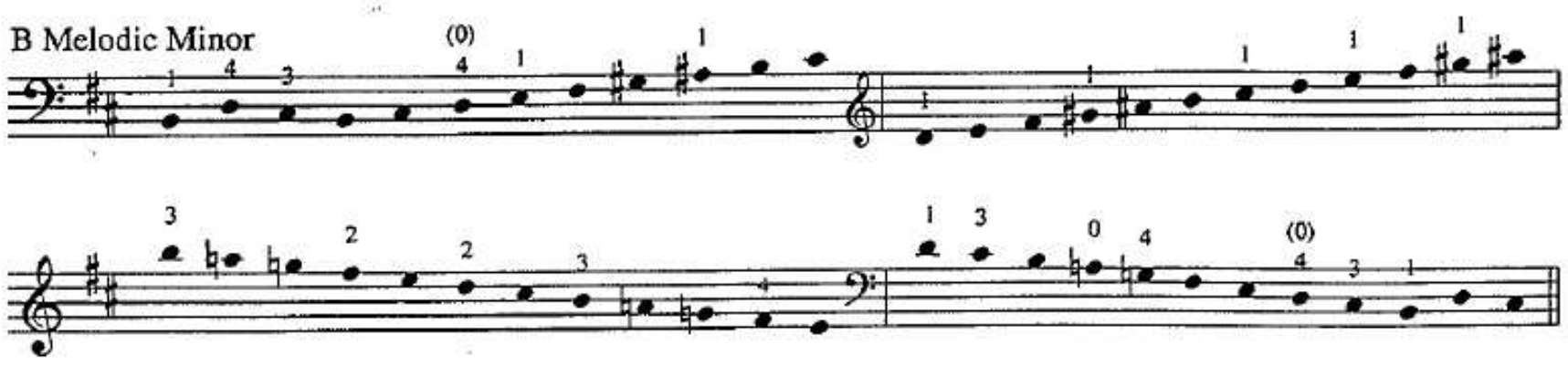
B-Flat Harmonic Minor



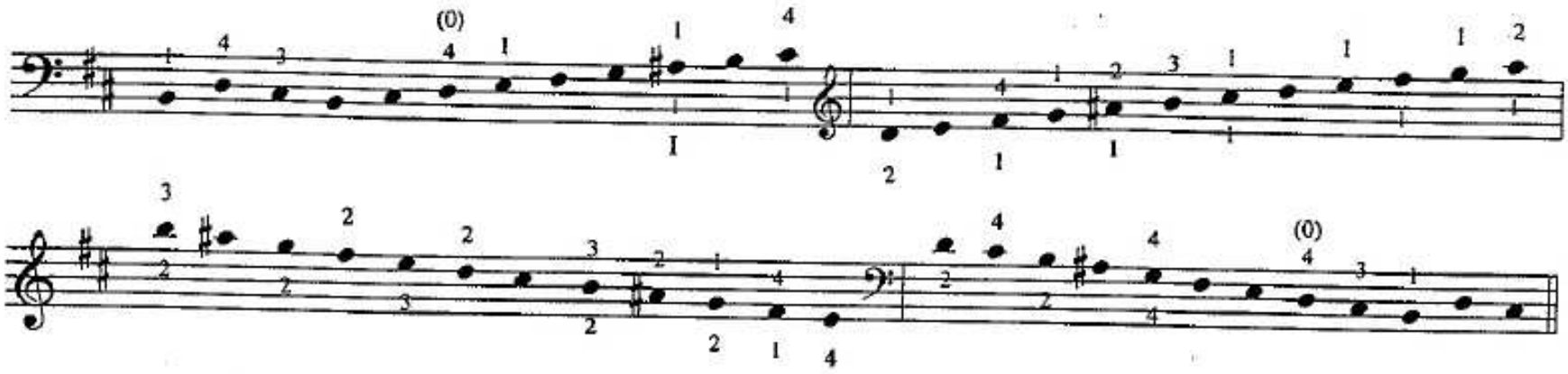
B Major



B Melodic Minor



B Harmonic Minor



Alternate Fingering Systems for Three-Octave Scales.

The scale fingerings suggested previously in this chapter make use of open strings wherever possible. It is of utmost importance, however, to know and master a variety of fingerings.
Jean Louis Duport (1749-1819) was the first cellist and pedagogue to organize cello technique into a comprehensive and logical system. In his book, *Essay on Fingering the Violoncello*, Duport advocates two fingering systems which can be applied to all keys, both major and minor. To retain consistency throughout his fingering systems open strings are not used in any key (with the exception of those beginning on open C.)

Duport's System 1--Groups of three notes for the first two octaves.
Play groups of three notes from the beginning. In C and C-Sharp end the second octave with the 4th finger on the D-string. In D, E-Flat, E, F, F-Sharp, G, and A-Flat end the second octave with the 4th finger on the A-string. In A, B-Flat and B end the second octave with the 3rd finger on the A-string. The third octave in all keys employs the fingering 1-2-1-2-1-2-3.

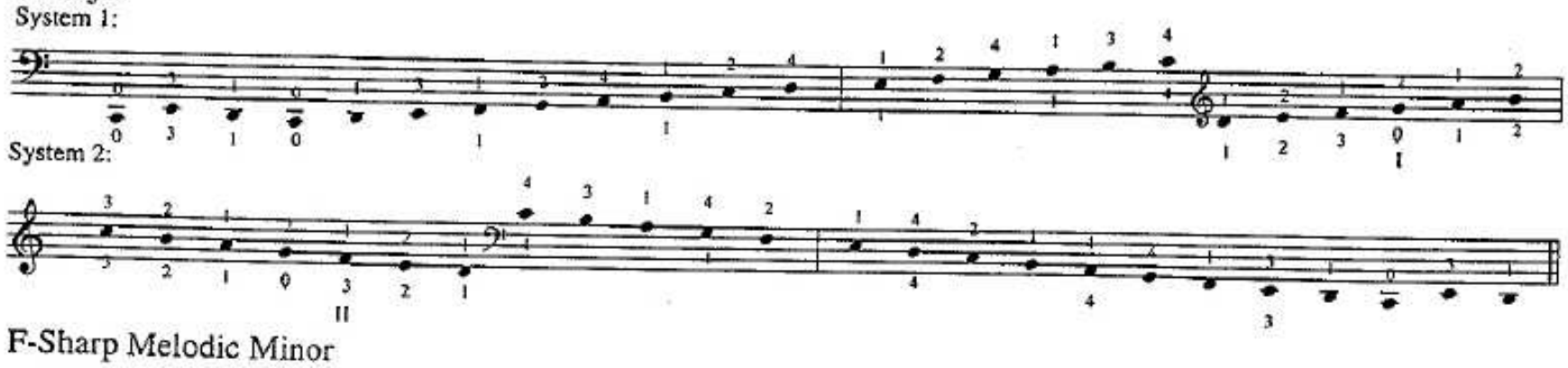
Duport's System 2--Groups of three notes for all three octaves.
Play in groups of three notes from the beginning. In C and C-Sharp end the second octave with the 4th finger on the D-string. All other keys end the second octave on the D-string with the 3rd finger. The fingering for the third octave is 1-2-3 on the D-string and thumb-1-2-3 on the A-string. This fingering is excellent for developing the octave hand shape in the higher registers.

Examples:

C Major

System 1:

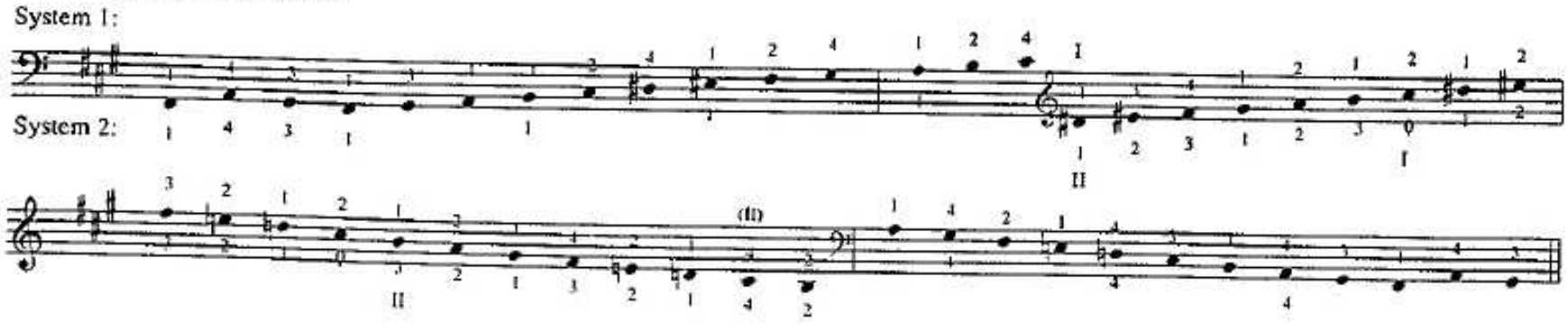
System 2:



F-Sharp Melodic Minor

System 1:

System 2:



5

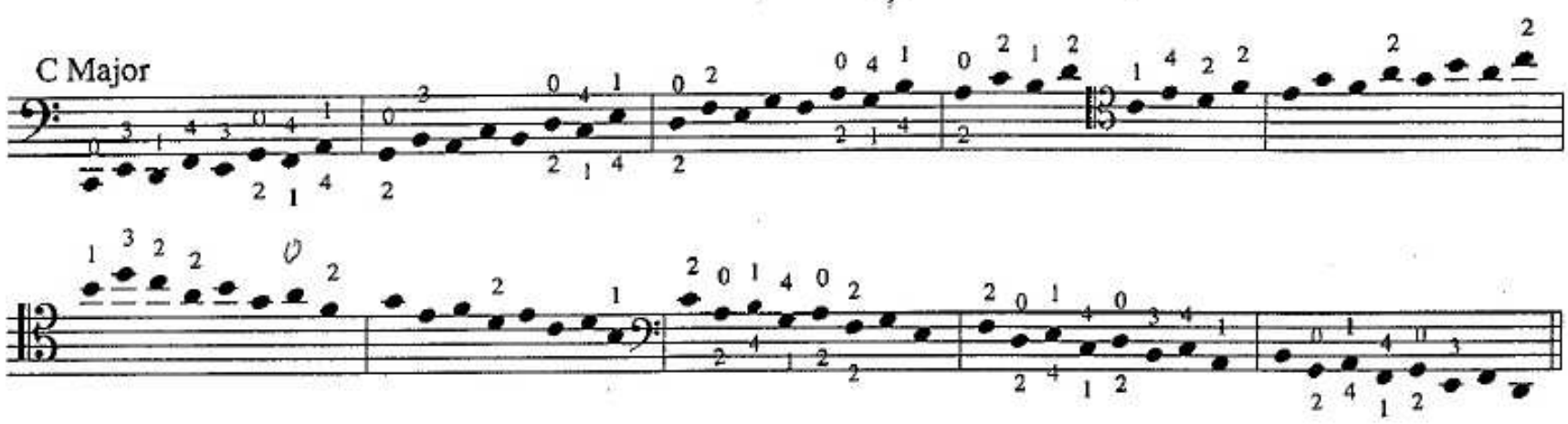
Broken Thirds In Three Octaves

♩=60

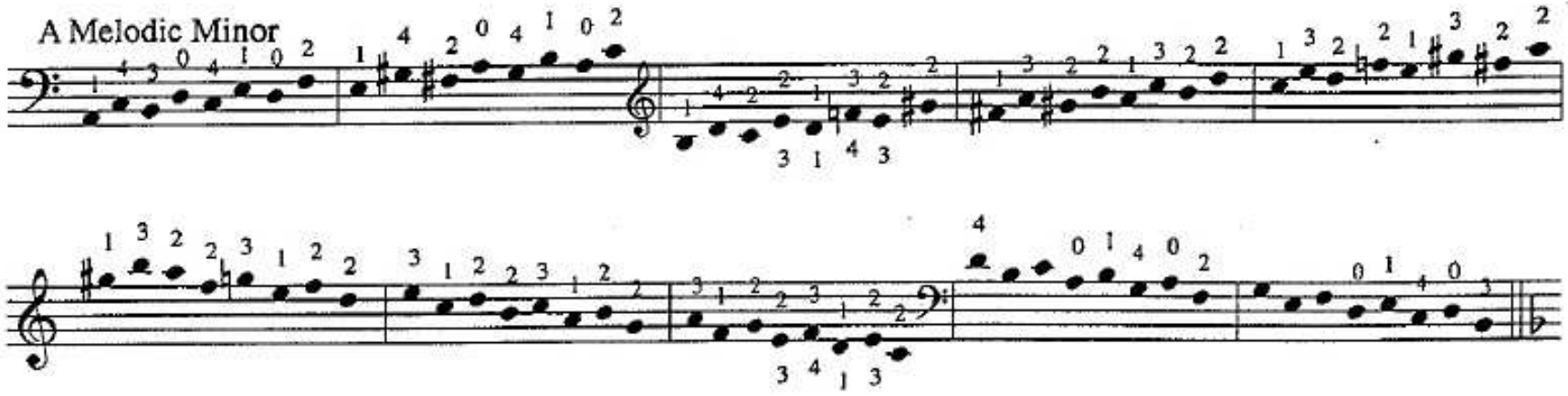
Groups of eight notes. PATTERNS: ***B1, B2, B4, B8***
R1, R2, R4, R8

Primary Patterns:

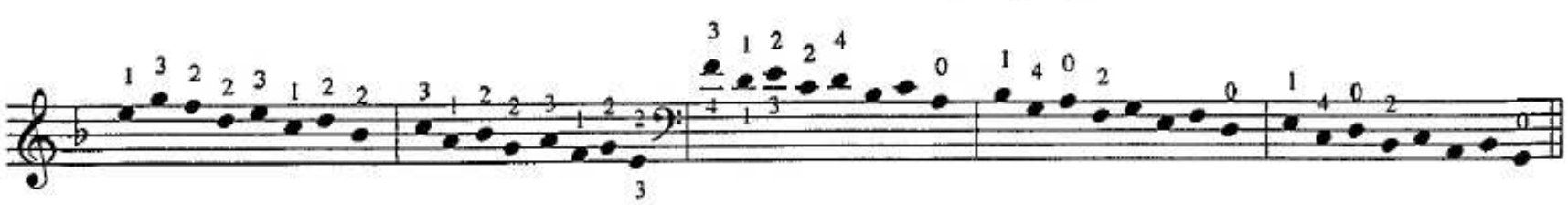
C Major



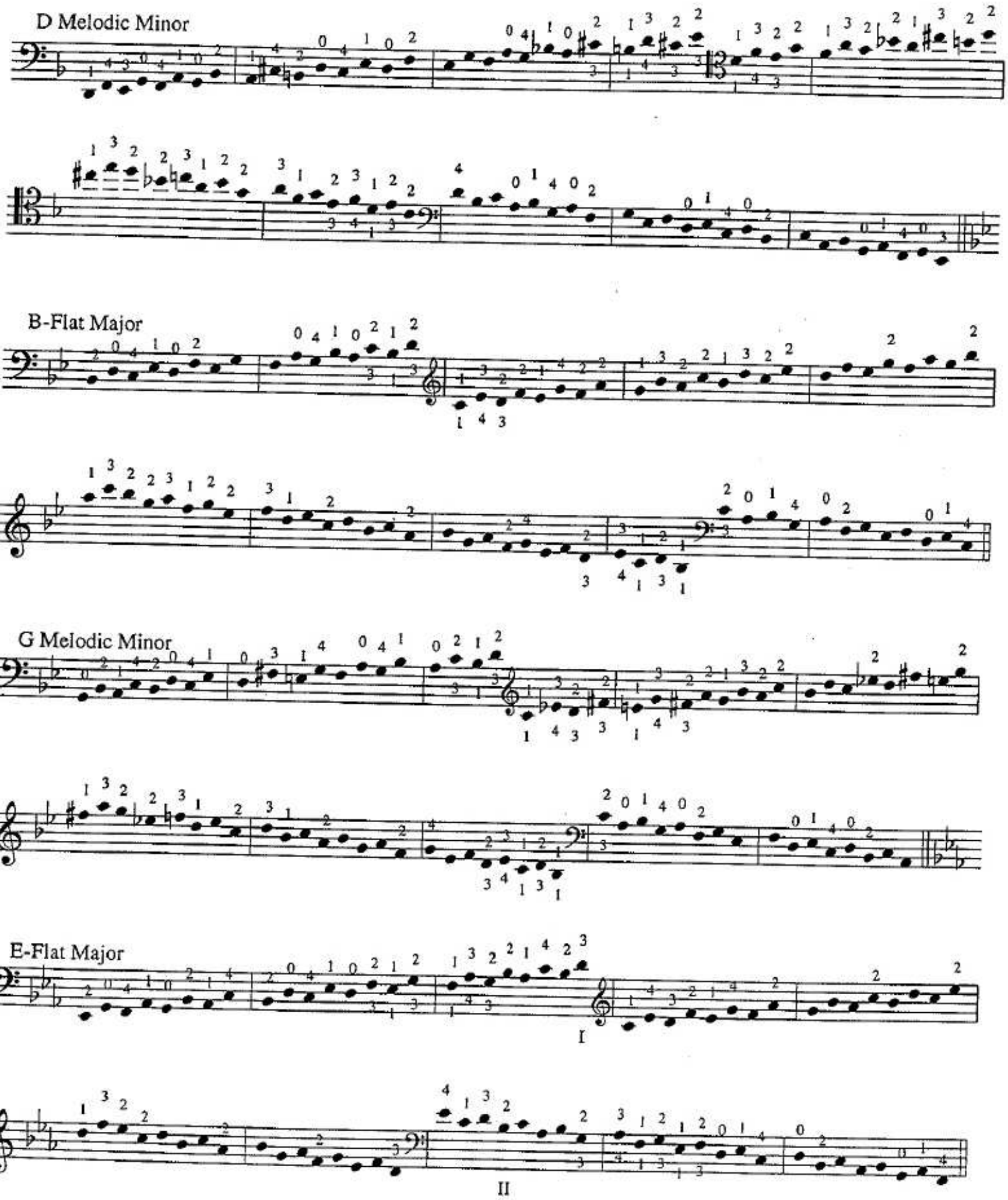
A Melodic Minor



F Major



D Melodic Minor



B-Flat Major

G Melodic Minor

E-Flat Major

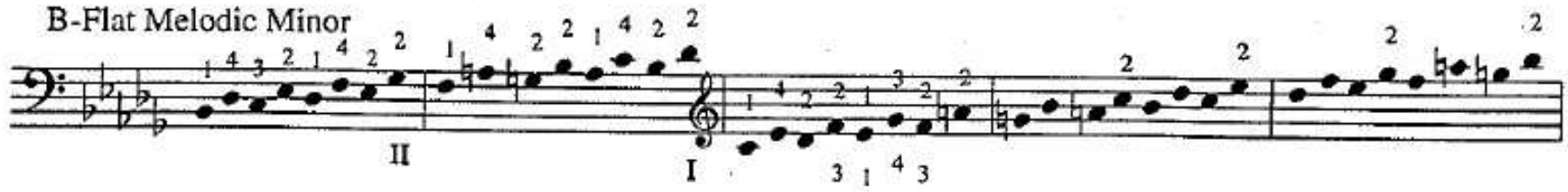
C Melodic Minor

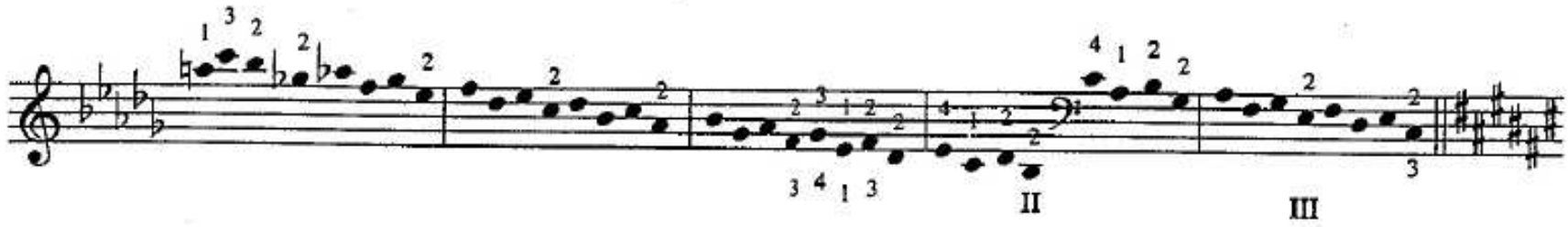
A-Flat Major

F Melodic Minor

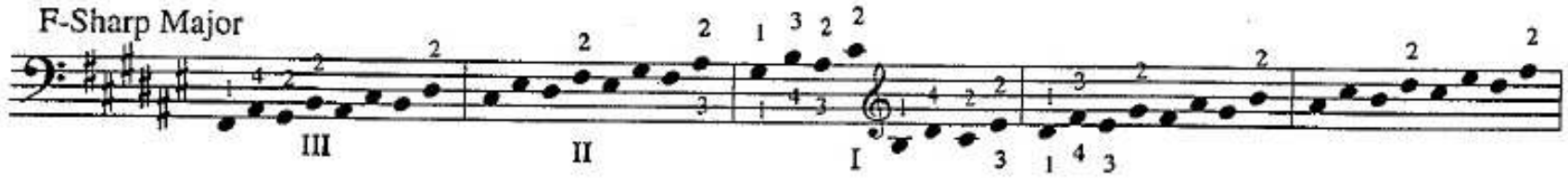
D-Flat Major

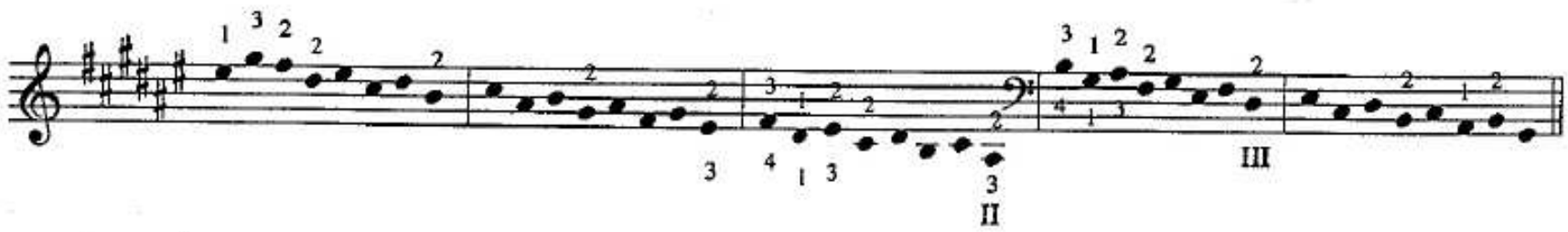
B-Flat Melodic Minor



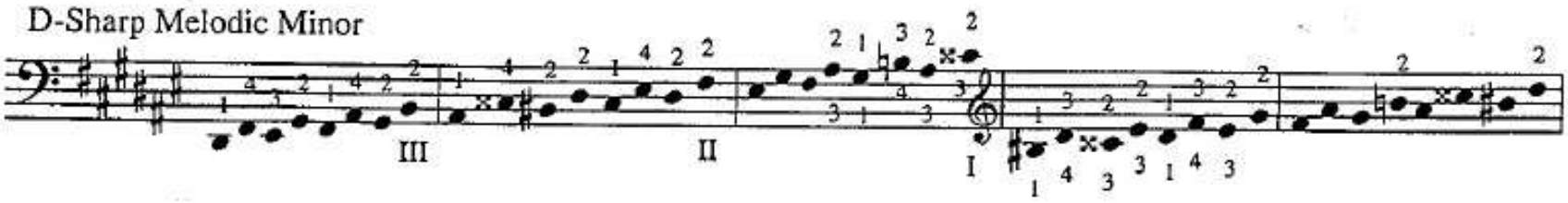


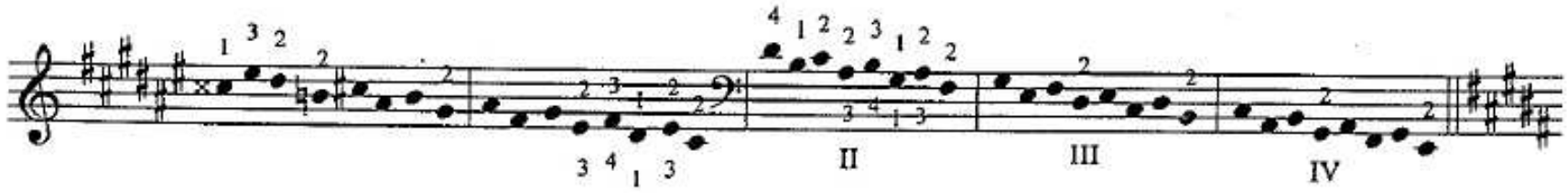
F-Sharp Major



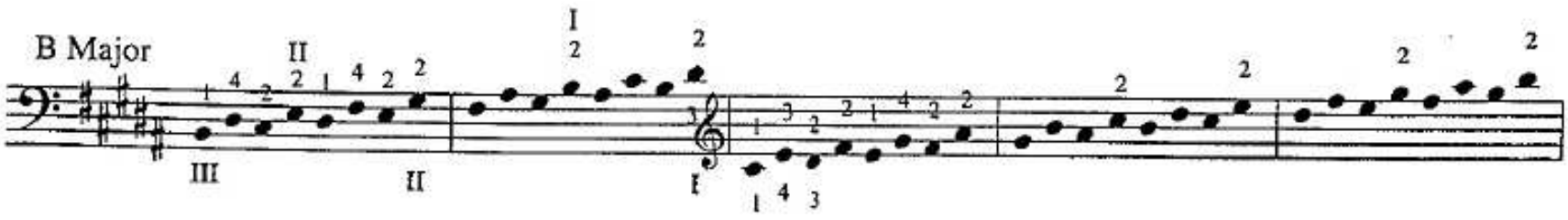


D-Sharp Melodic Minor





B Major



G-Sharp Melodic Minor

E Major

C-Sharp Melodic Minor

A Major

F-Sharp Melodic Minor

D Major

B Melodic Minor

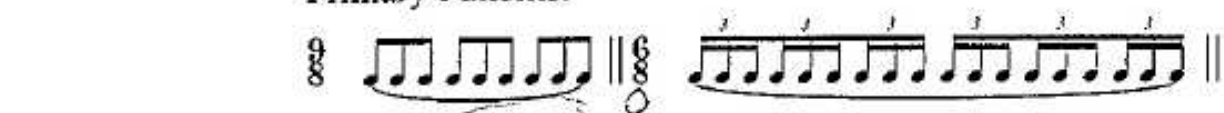
G Major

E Melodic Minor

6
Three-Octave Arpeggios

Groups of nine notes. PATTERNS: ***B1, B3, B9***
R1, R3, R9

Primary Patterns:



Key of C

C Minor

Flat Submediant Six

Augmented

Relative Minor Six

Dominant Seventh of F

Subdominant Six-four

Minor Subdominant Six-Four

C with Four-three Suspension

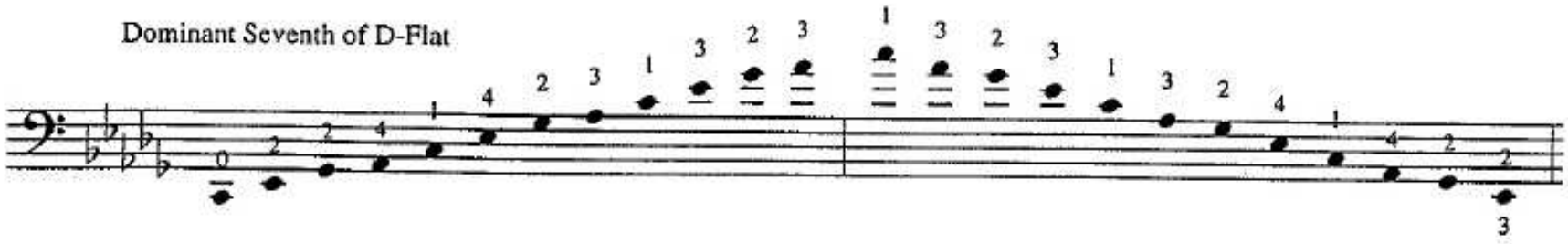
III II I

C Major

II III IV

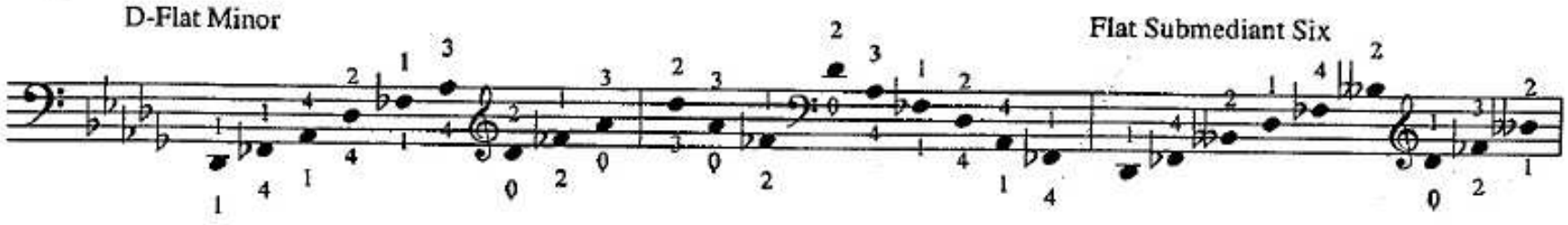
Note: The Dominant Seventh Arpeggios contain twelve notes in each measure rather than nine like the other arpeggios. Adjust the bowings accordingly. For additional information and an explanation of the Three Octave Arpeggios please see page 38 at the end of this chapter.

Dominant Seventh of D-Flat



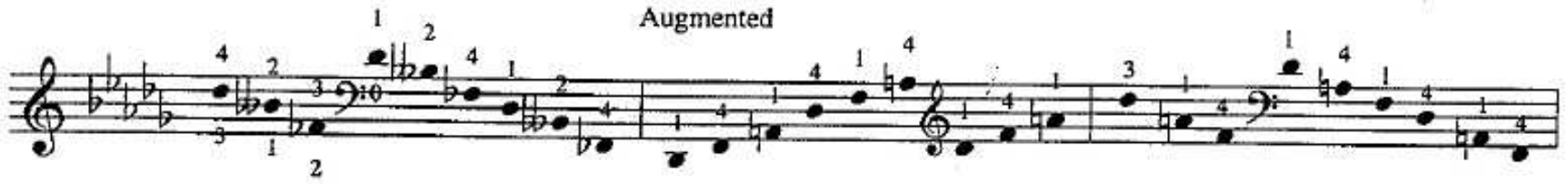
Key of D-Flat

D-Flat Minor

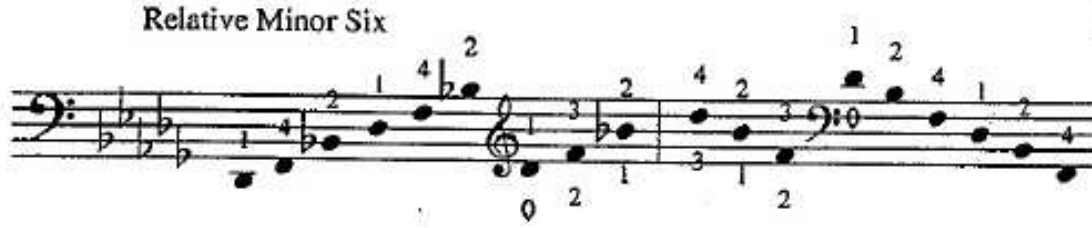


Flat Submediant Six

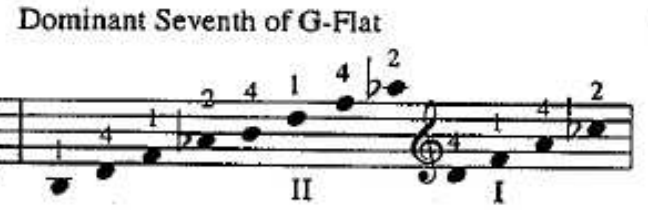
Augmented



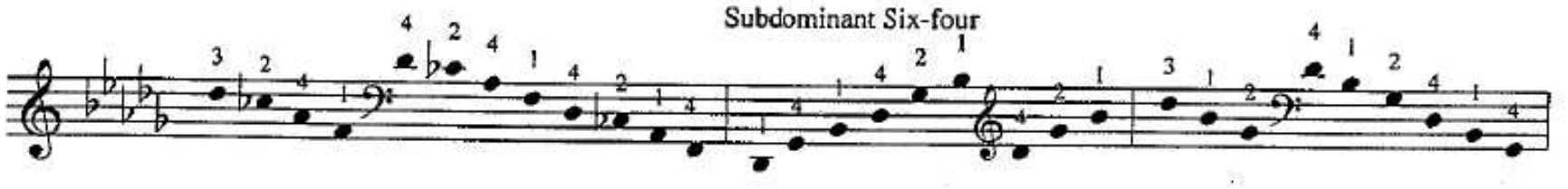
Relative Minor Six



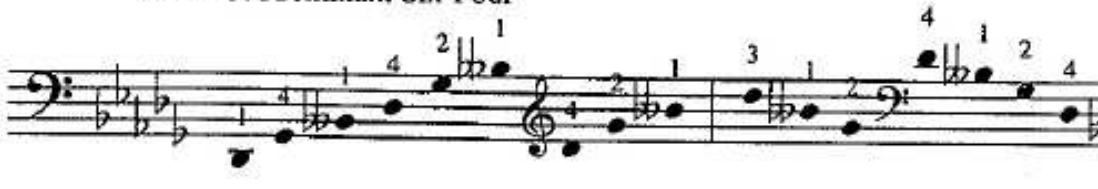
Dominant Seventh of G-Flat



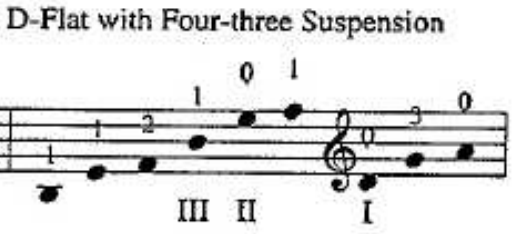
Subdominant Six-four



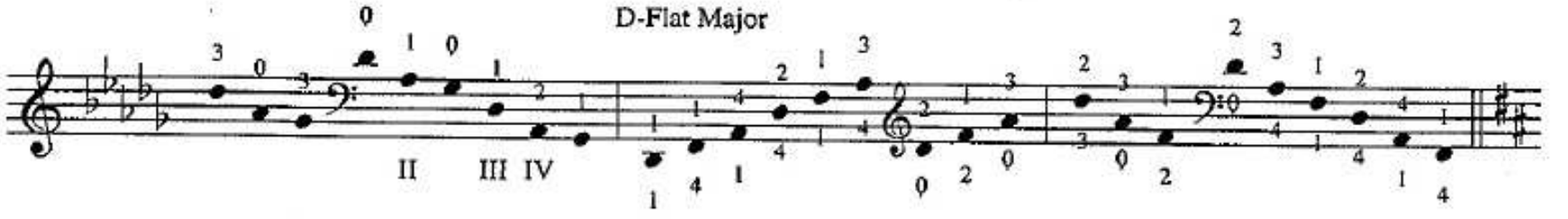
Minor Subdominant Six-Four



D-Flat with Four-three Suspension



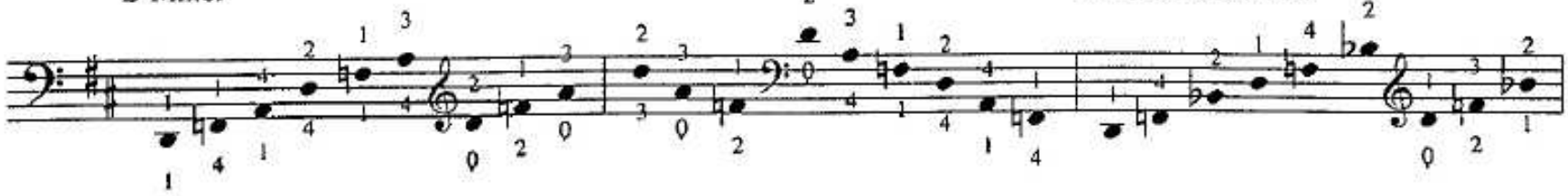
D-Flat Major



Dominant Seventh of D

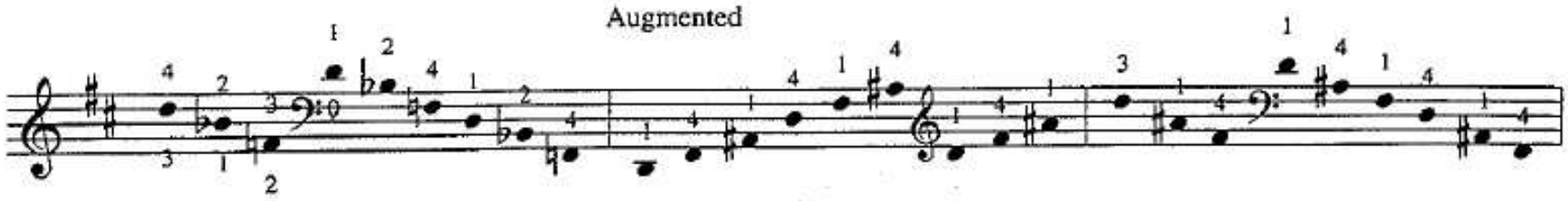
Key of D

D Minor

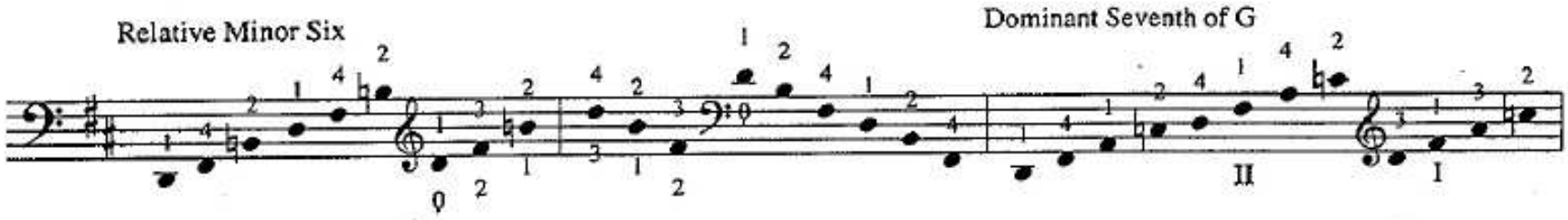


Flat Submediant Six

Augmented

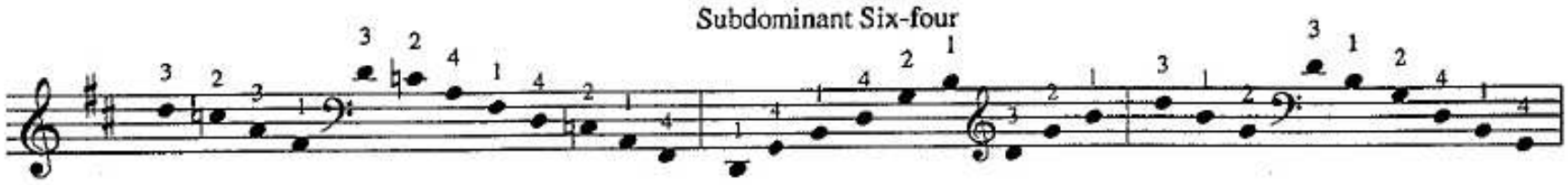


Relative Minor Six



Dominant Seventh of G

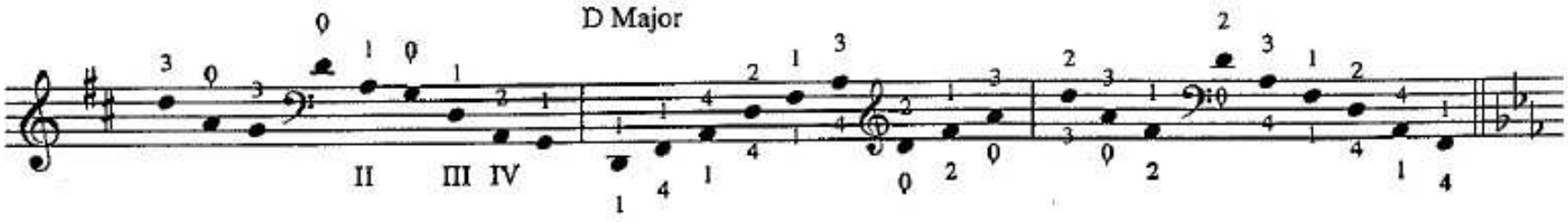
Subdominant Six-four



Minor Subdominant Six-four

D with Four-three Suspension

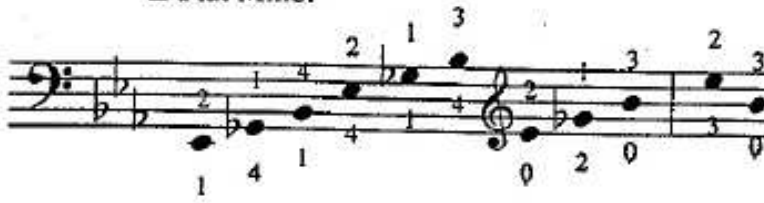
D Major



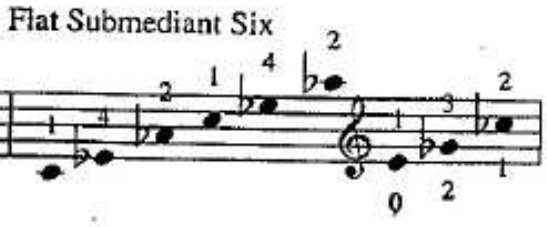
Dominant Seventh of E-Flat

Key of E-Flat

E-Flat Minor



Flat Submediant Six



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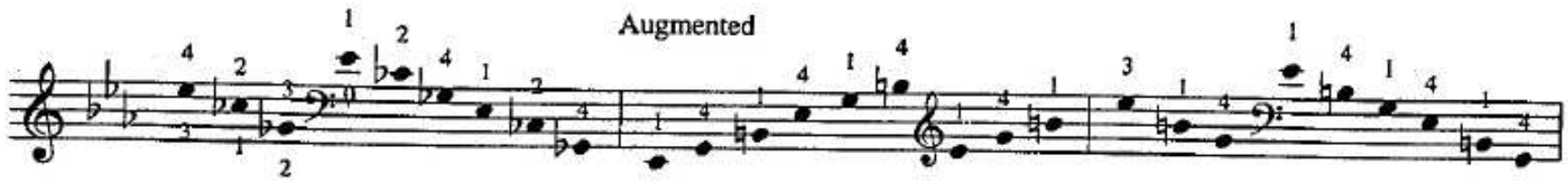
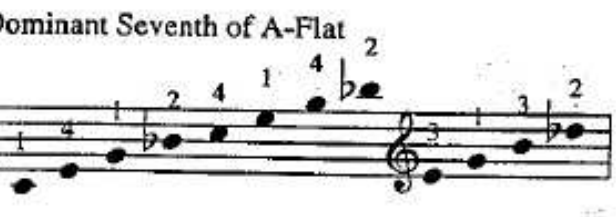


Relative Minor Six

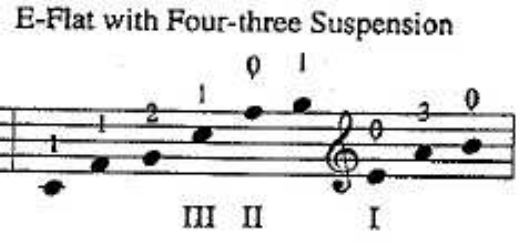
Dominant Seventh of A-Flat



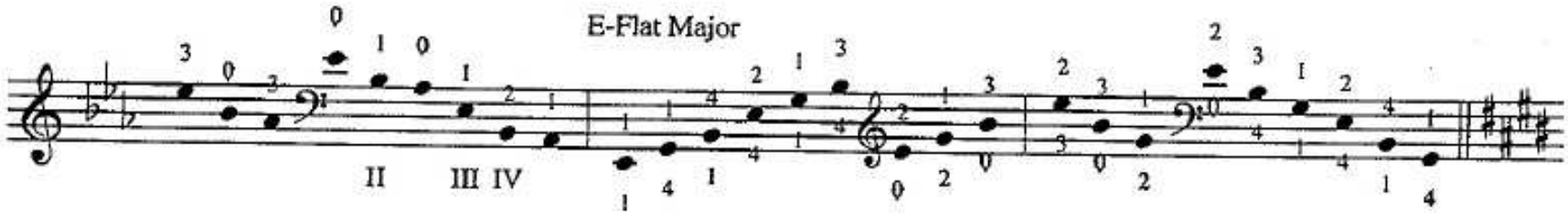
Subdominant Six-four

Minor Subdominant Six-four

E-Flat with Four-three Suspension



E-Flat Major



Dominant Seventh of E

Key of E

E Minor

Flat Submediant Six

Augmented

Relative Minor Six

Dominant Seventh of A

Subdominant Six-four

Minor Subdominant Six-four

E with Four-three Suspension

IV III II I

E Major

II III IV

Dominant Seventh of F

Key of F

F Minor

Flat Submediant Six

Augmented

Relative Minor Six

Dominant Seventh of B-Flat

IV III II I

Subdominant Six-four

Minor Subdominant Six-four

F with Four-three Suspension

IV III II I

F Major

II III IV

Dominant Seventh of F-Sharp

Key of F-Sharp

F-Sharp Minor

Flat Submediant Six

Augmented

Relative Minor Six

Dominant Seventh of B

IV III II I

Subdominant Six-four

Minor Subdominant Six-four

F-Sharp with Four-three Suspension

IV III II I

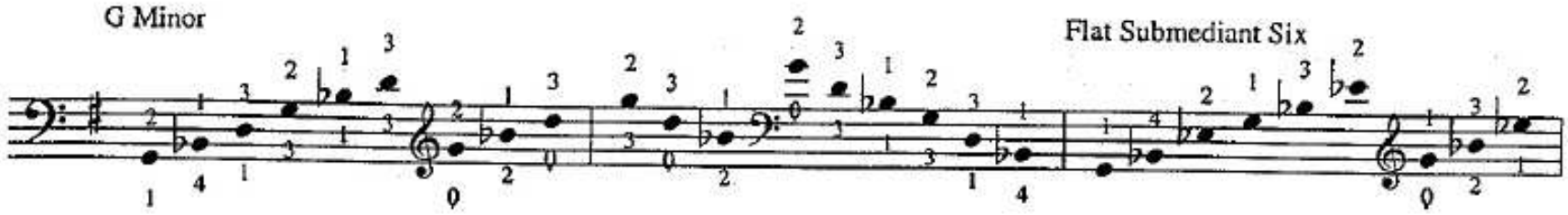
F-Sharp Major

II III IV

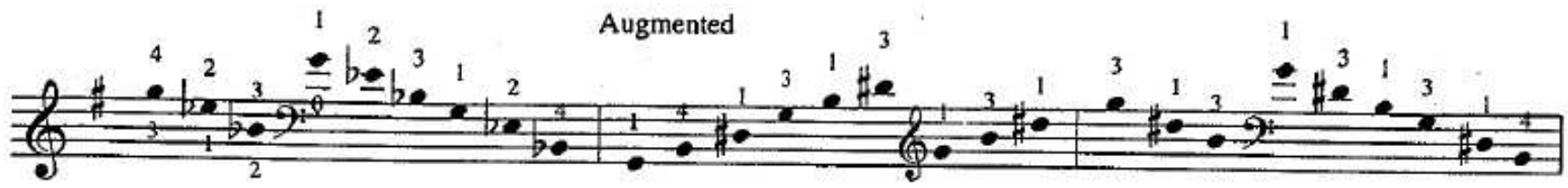
Dominant Seventh of G

Key of G

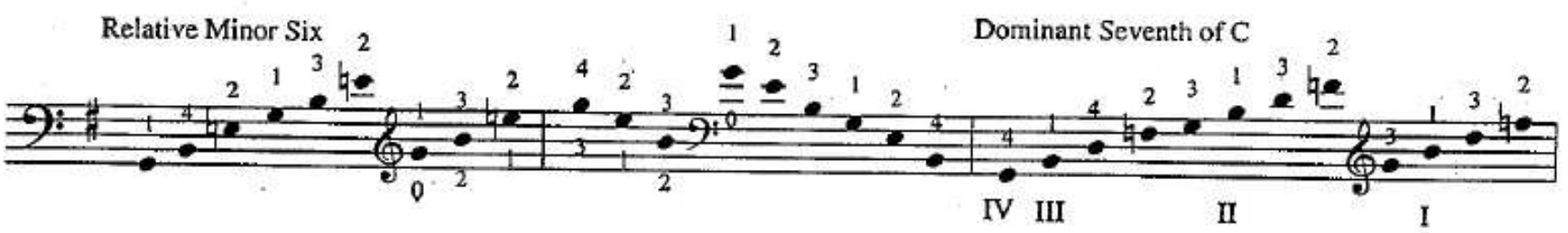
G Minor



Flat Submediant Six



Augmented

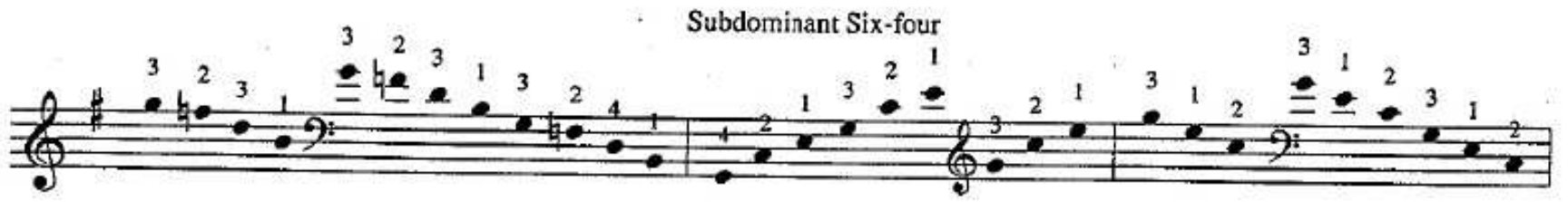


Relative Minor Six

Dominant Seventh of C

IV III II I

Subdominant Six-four

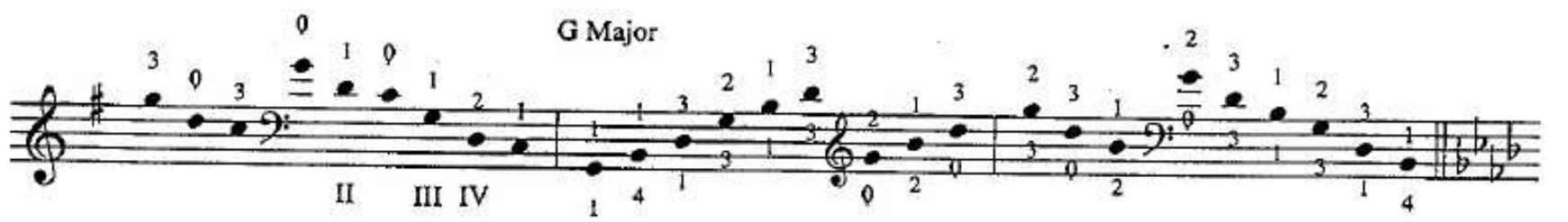


Minor Subdominant Six-four

G with Four-three Suspension

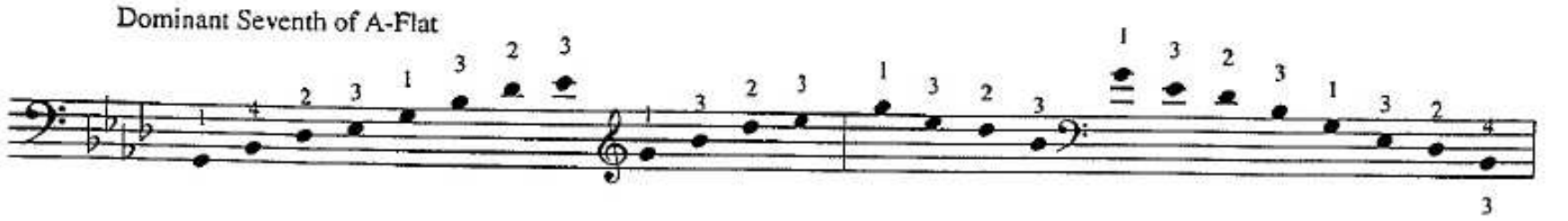
IV III II I

G Major



II III IV

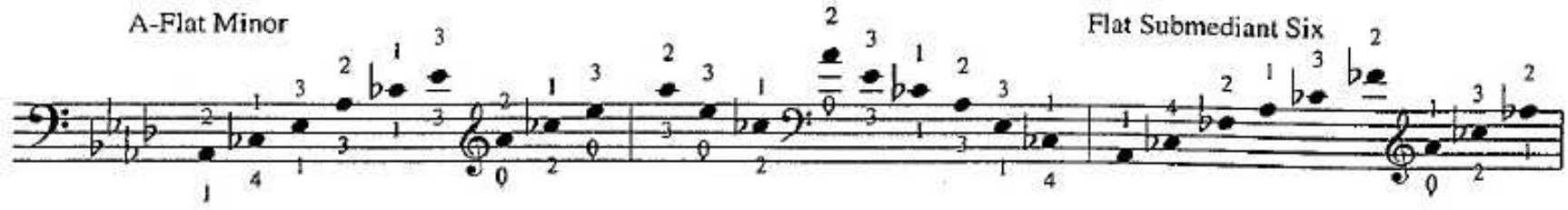
Dominant Seventh of A-Flat



Key of A-Flat

A-Flat Minor

Flat Submediant Six



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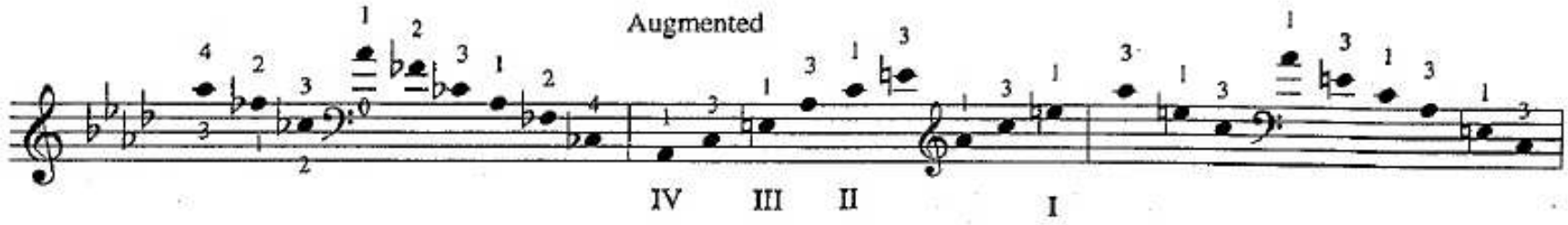
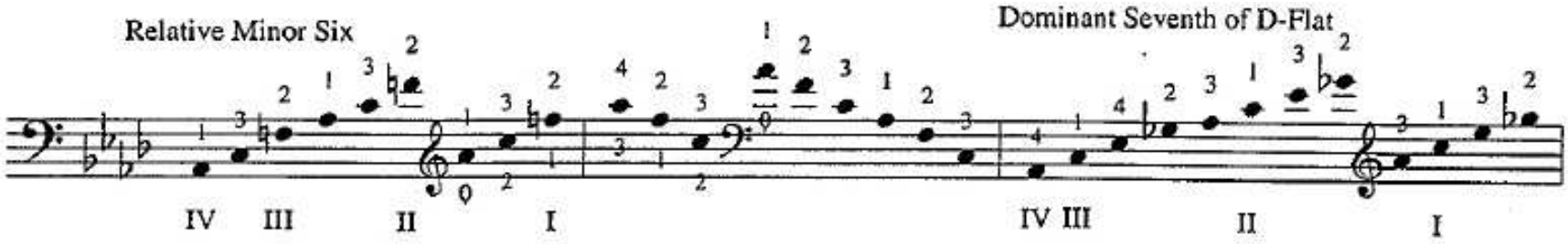
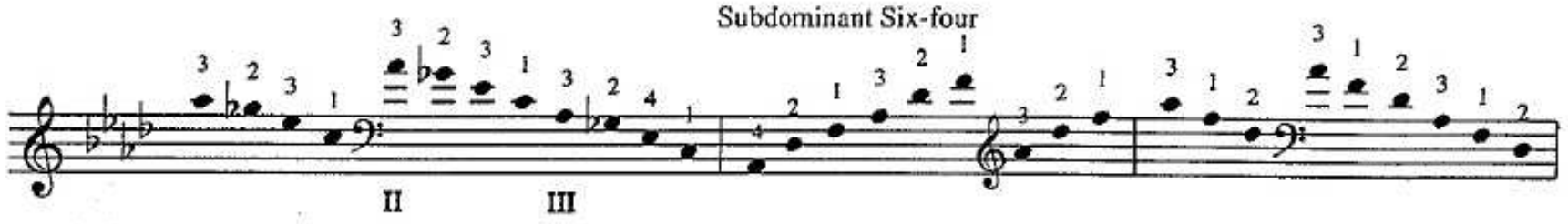


Relative Minor Six

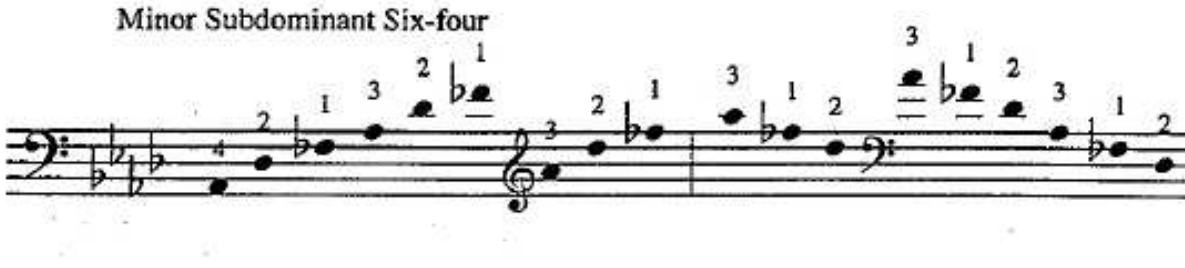


Dominant Seventh of D-Flat

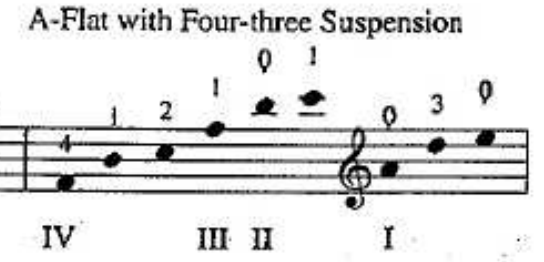
Subdominant Six-four



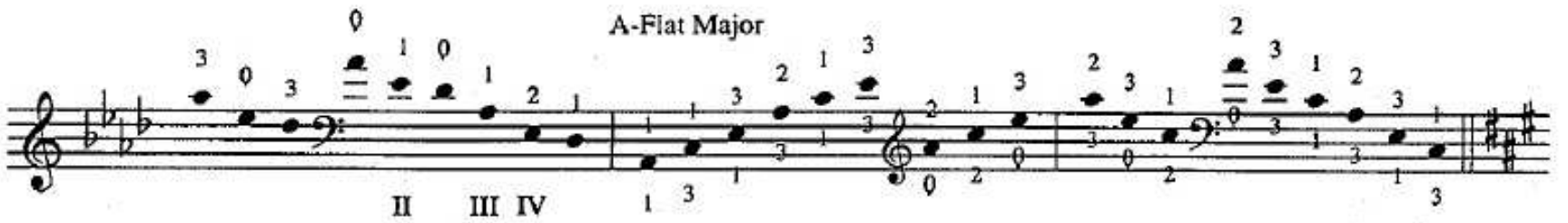
Minor Subdominant Six-four



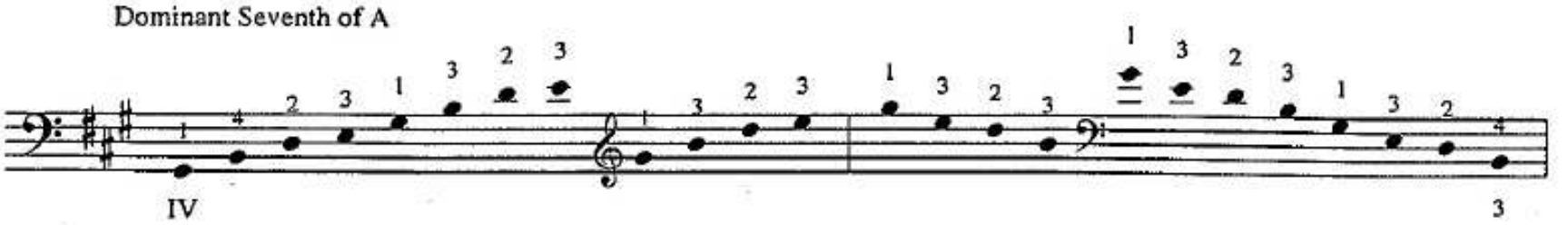
A-Flat with Four-three Suspension



A-Flat Major

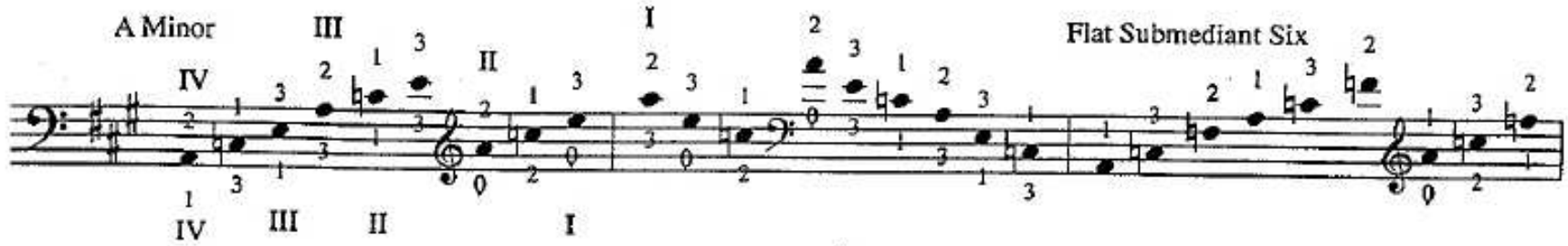


Dominant Seventh of A



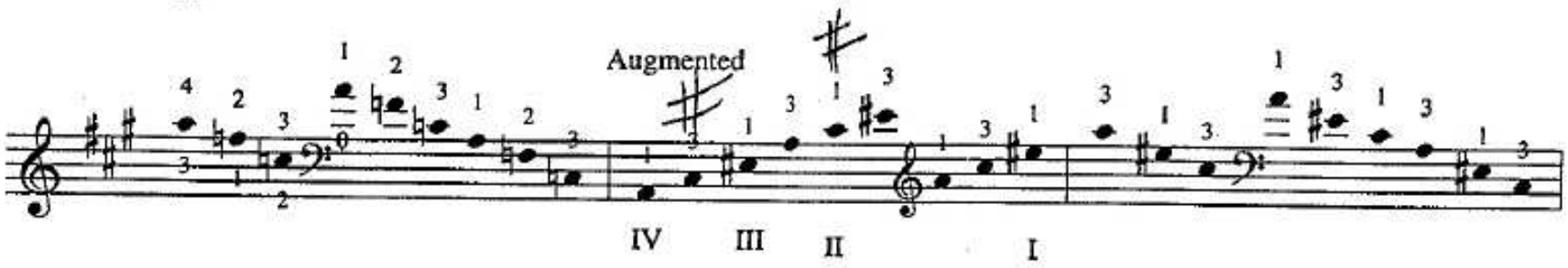
Key of A

A Minor

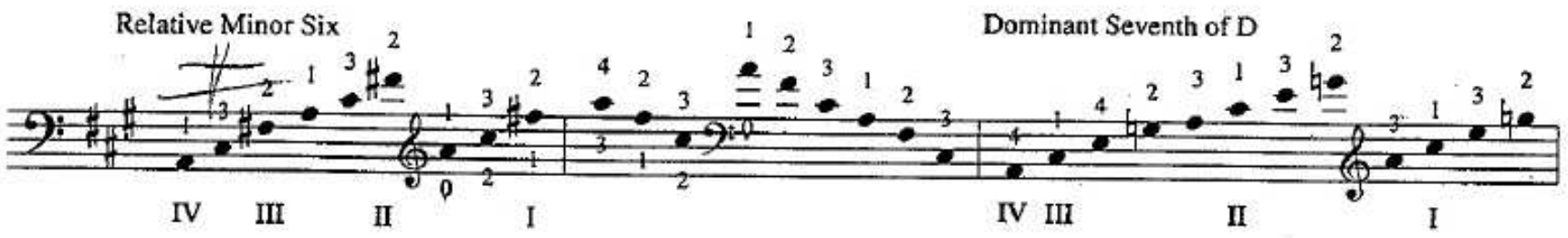


Flat Submediant Six

Augmented

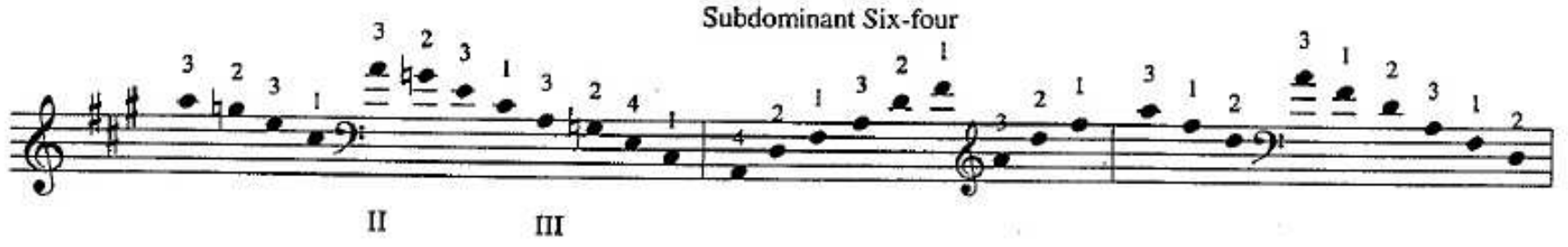


Relative Minor Six



Dominant Seventh of D

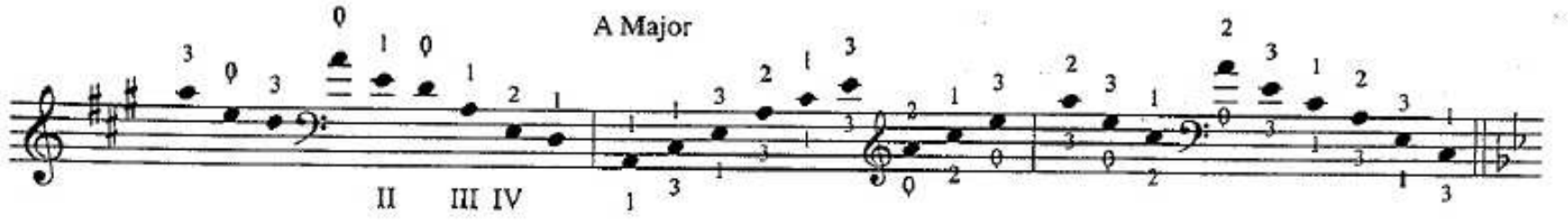
Subdominant Six-four



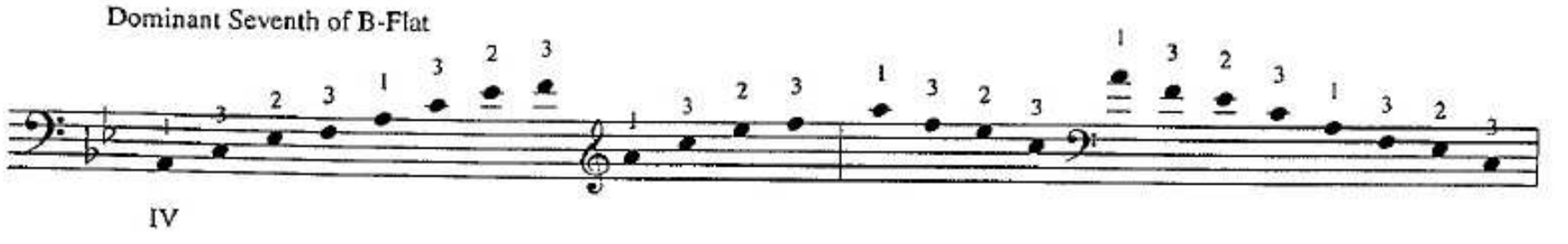
Minor Subdominant Six-four

A with Four-three Suspension

A Major



Dominant Seventh of B-Flat

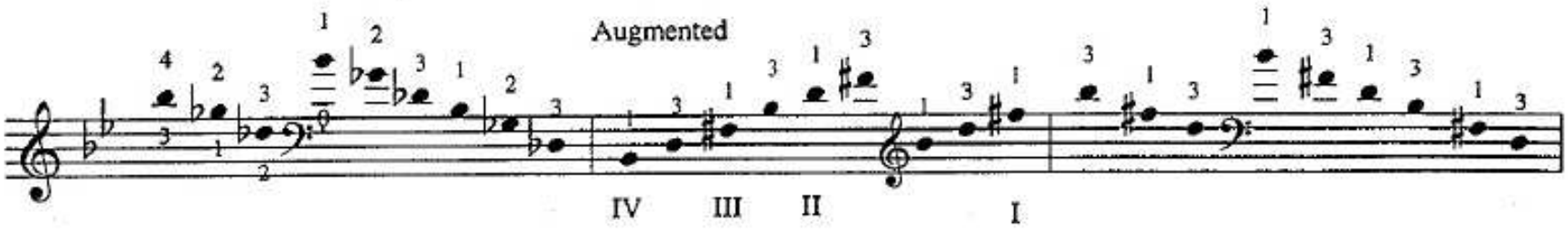


Key of B-Flat

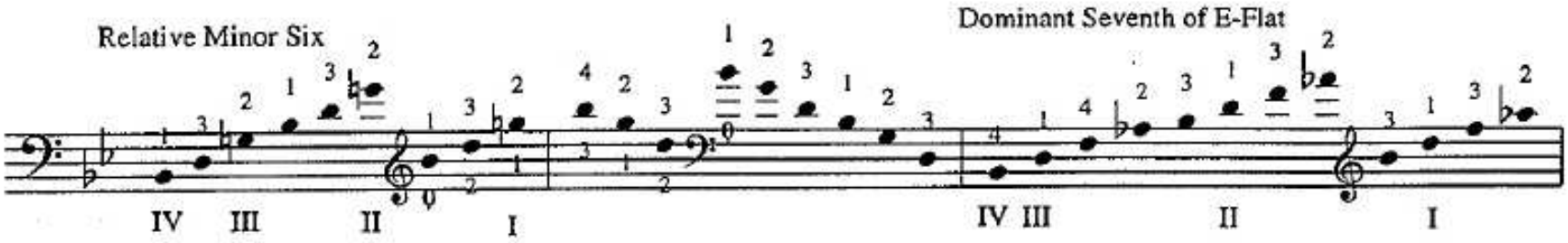
B-Flat Minor

Flat Submediant Six

Augmented

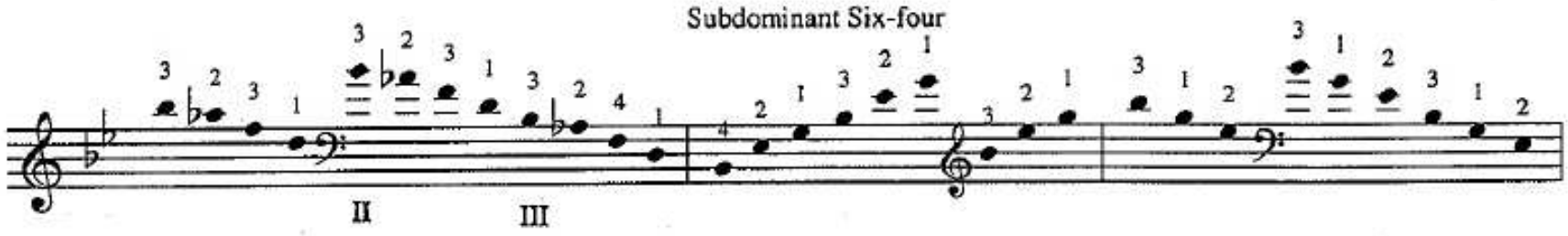


Relative Minor Six

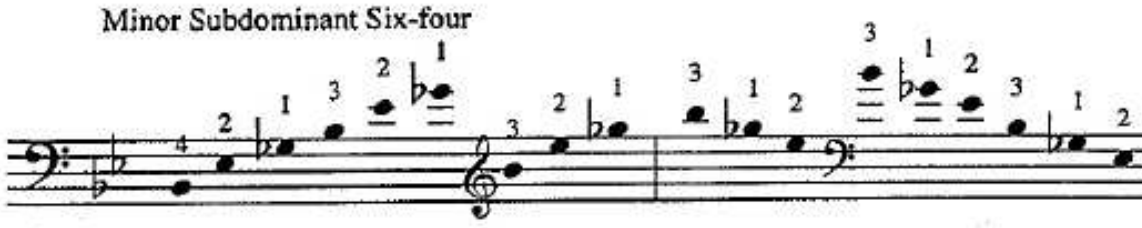


Dominant Seventh of E-Flat

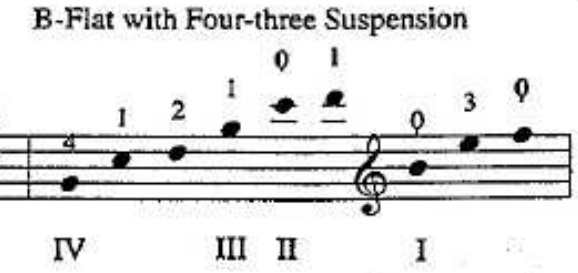
Subdominant Six-four



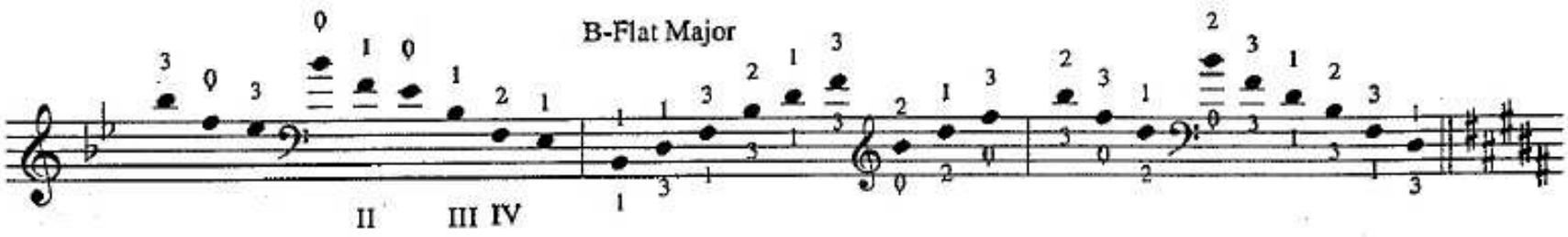
Minor Subdominant Six-four



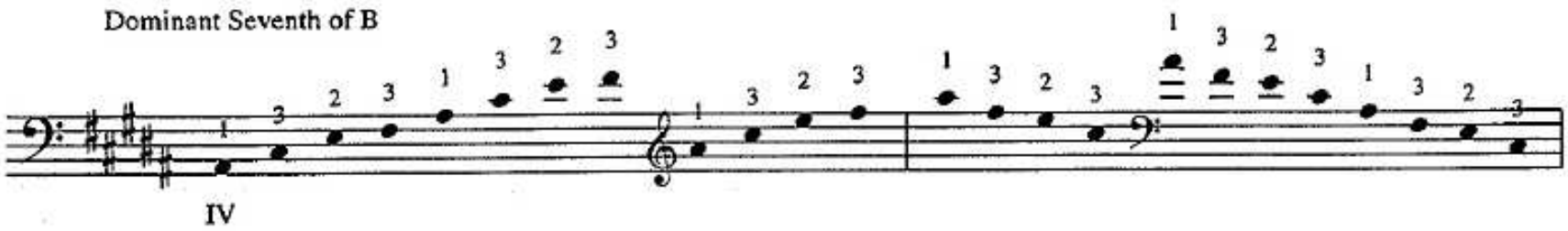
B-Flat with Four-three Suspension



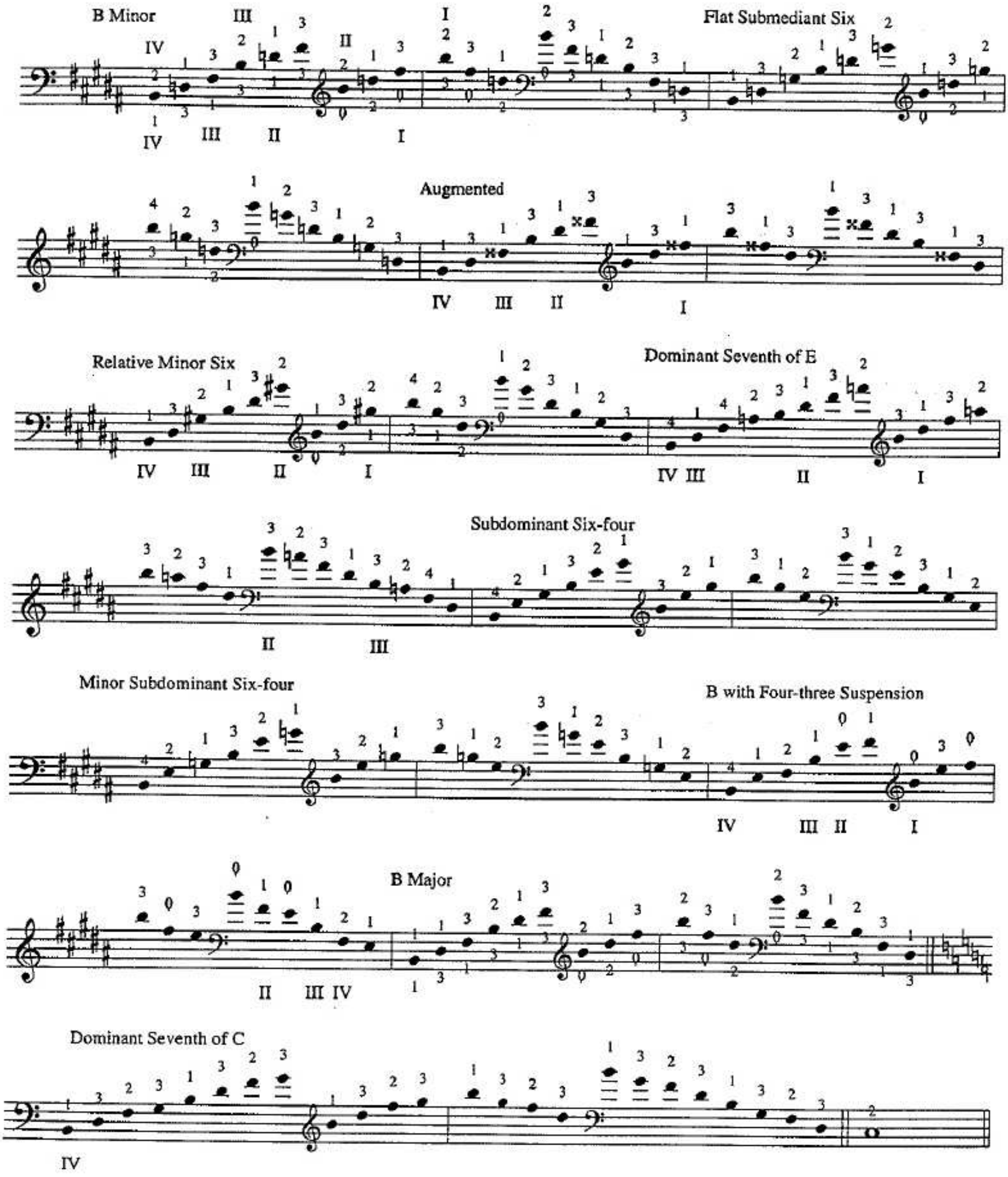
B-Flat Major



Dominant Seventh of B



Key of B


B Minor
Flat Submediant Six
Augmented
Relative Minor Six
Dominant Seventh of E
Subdominant Six-four
Minor Subdominant Six-four
B with Four-three Suspension
B Major
Dominant Seventh of C

An explanation of fingerings for the Major and Minor Arpeggios in Chapter 6, "Three-Octave Arpeggios":

A) Above the Staff

The fingerings above the staff are the standard fingerings used for the Three-Octave Arpeggios. They are also very useful for the Four-Octave Arpeggios in Chapter 9. (These standard fingerings appear below the staff in the Four-Octave Arpeggios.). See page 55, *"B) Below the Staff"*, in chapter 9 for further explanation.

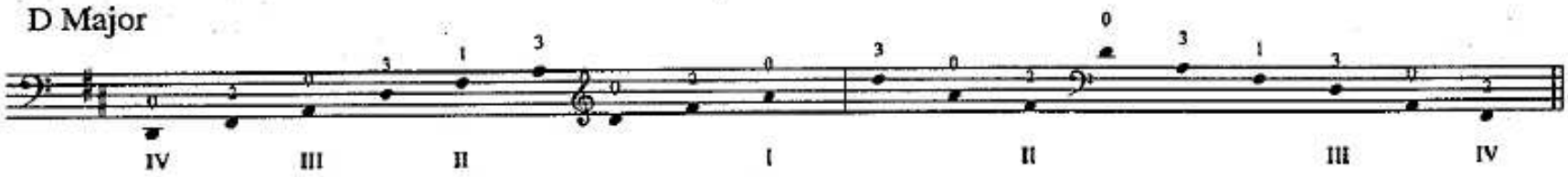
B) *Below the Staff*

The fingerings below the staff utilize the thumb. It is important in modern cello playing to be able to shift effortlessly from the lower to the higher positions using the thumb.

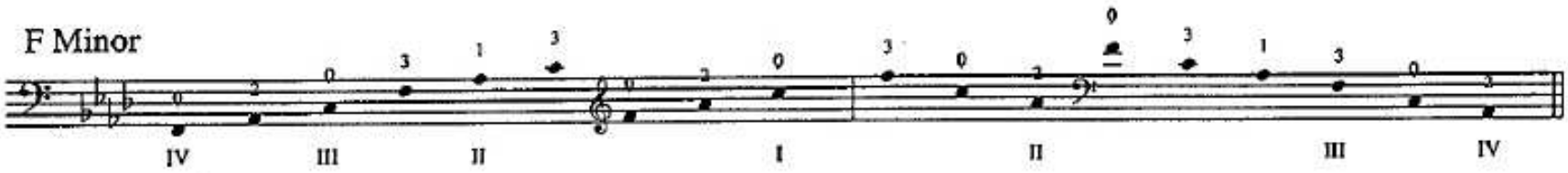
In addition to the fingerings notated in this chapter, fingerings given in the examples below will work for all major and minor arpeggios in root position.

Examples:

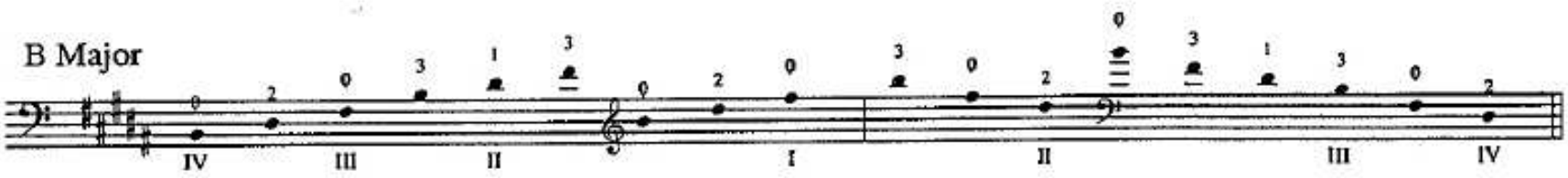
D Major



F Minor



B Major



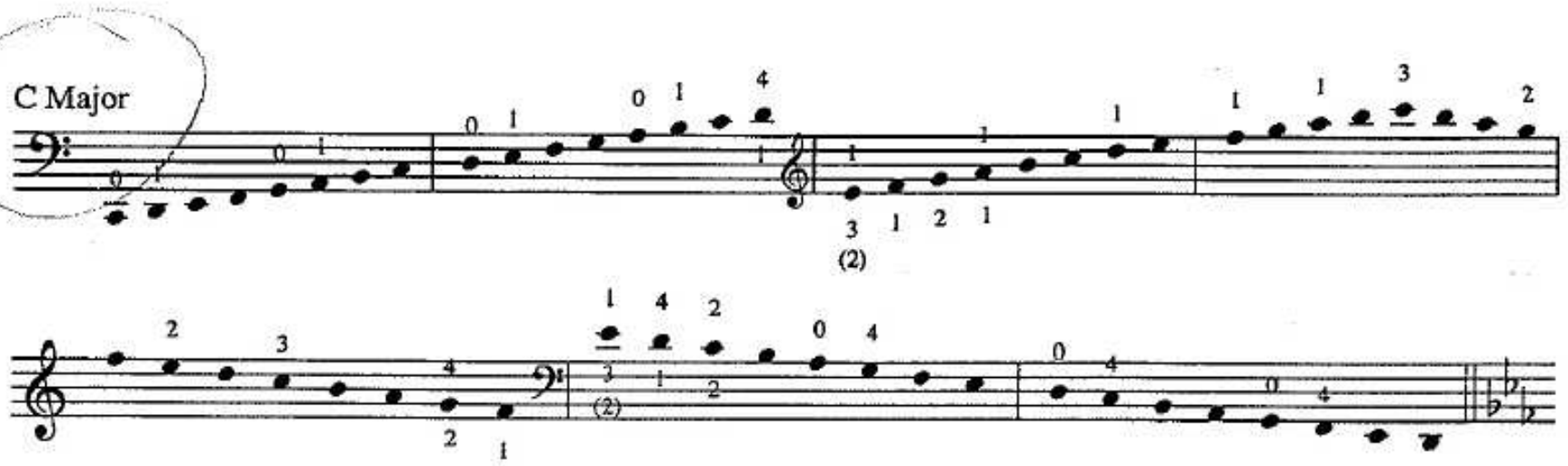
7

Four-Octave Scales

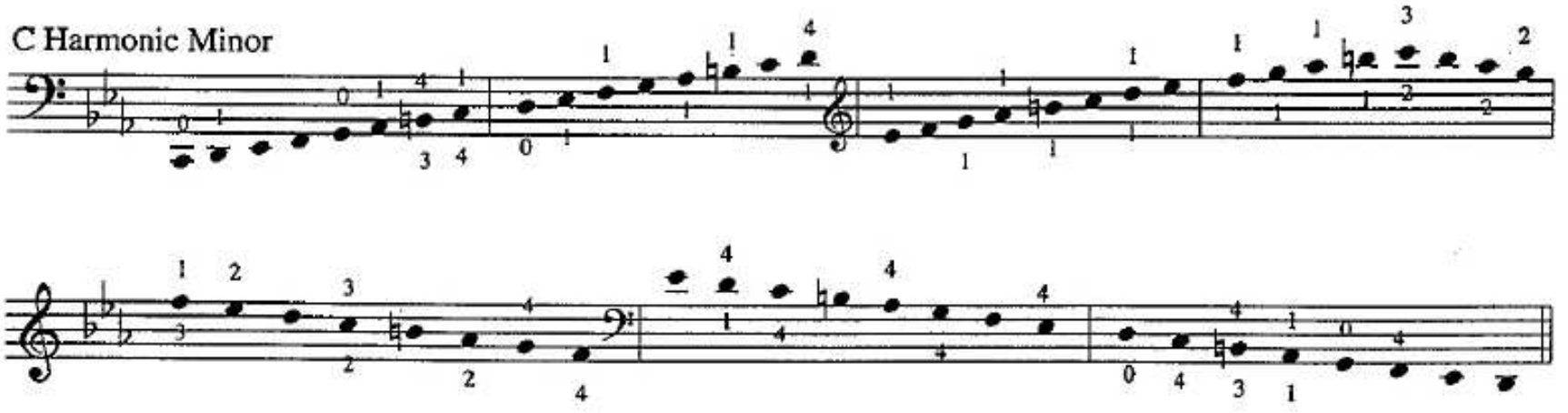
Groups of eight notes. PATTERNS: ***B1, B2, B4, B8***
R1, R2, R4, R8

Primary Patterns:

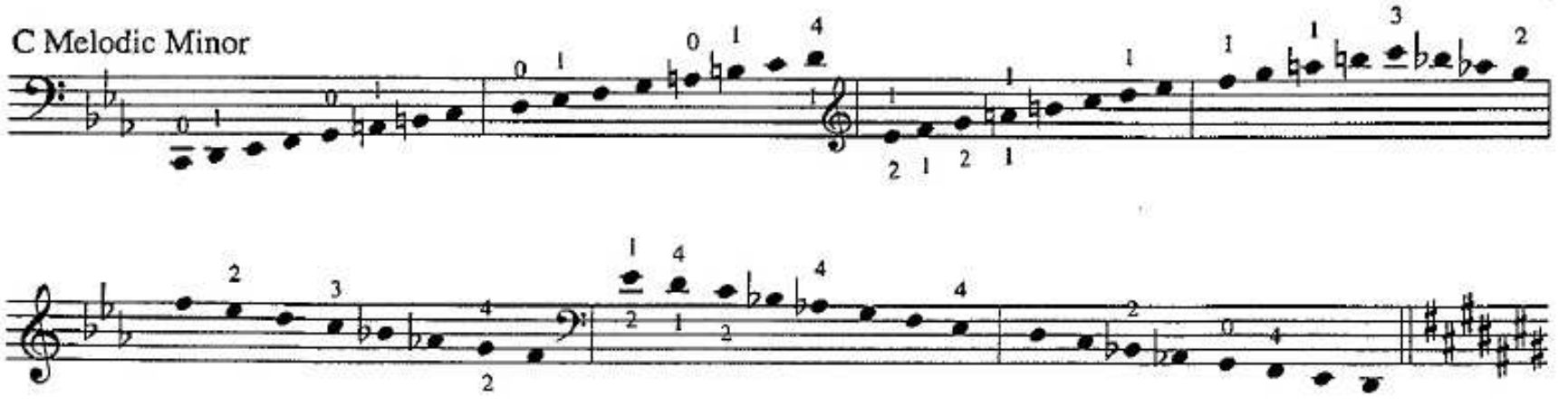
C Major



C Harmonic Minor

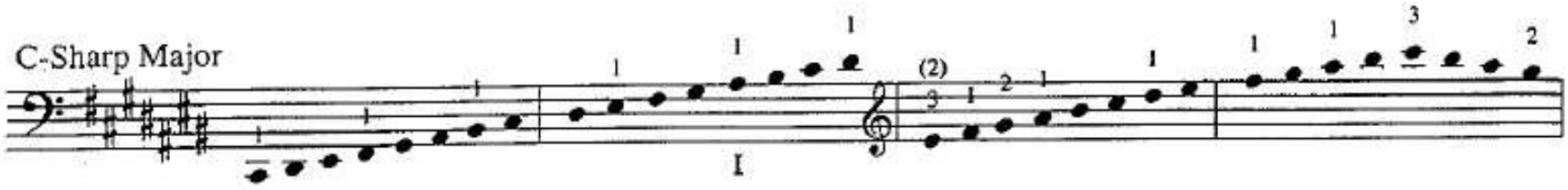


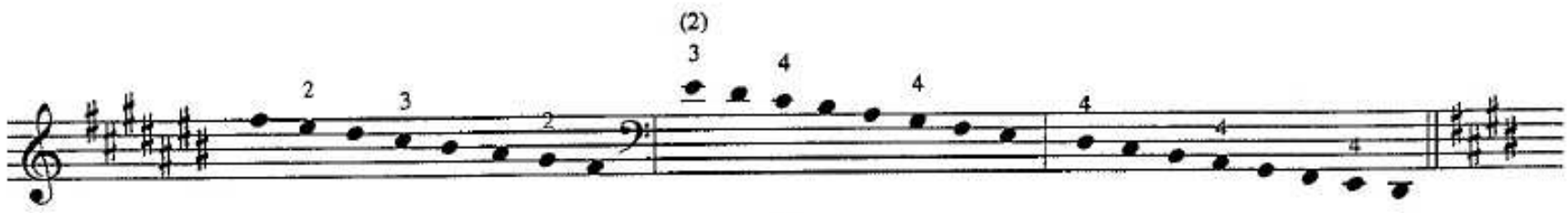
C Melodic Minor



Note: Please look at page 48 for alternate fingering systems for the four octave scales.

C-Sharp Major



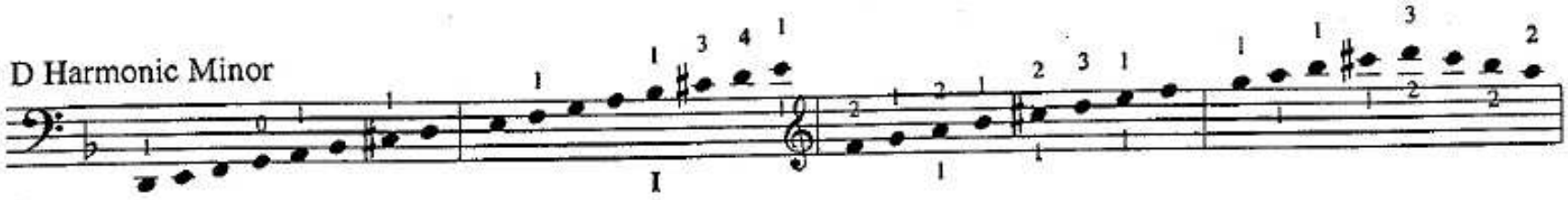


C-Sharp Harmonic Minor

C-Sharp Melodic Minor

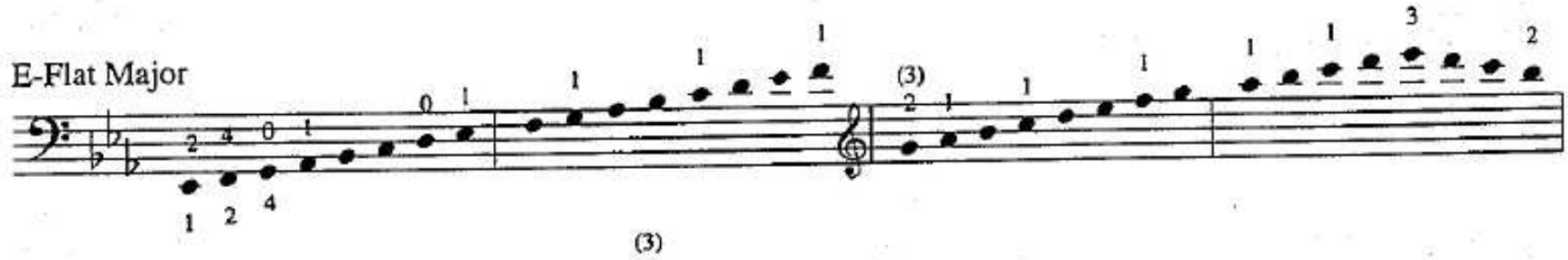
D Major

D Harmonic Minor

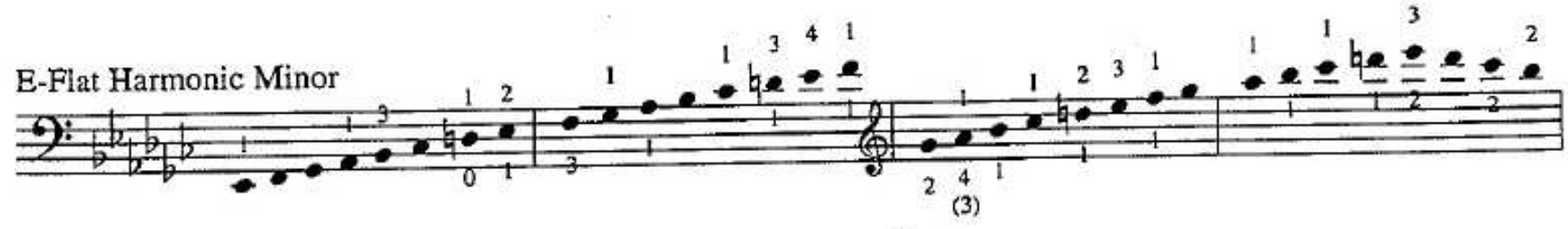


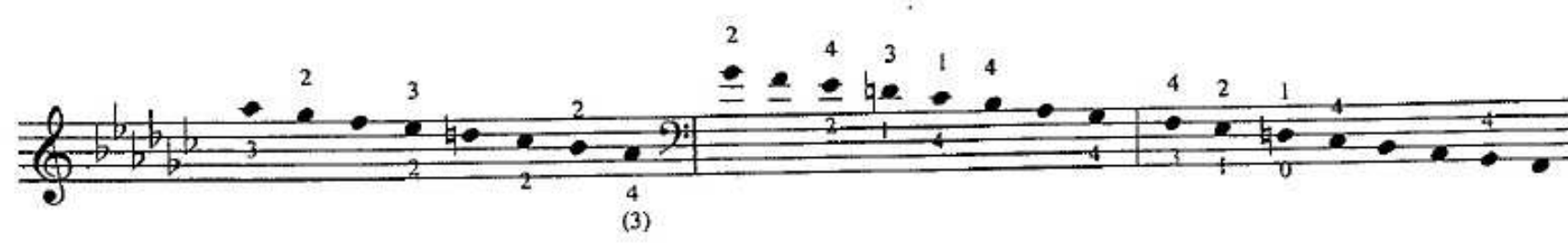
D Melodic Minor

E-Flat Major

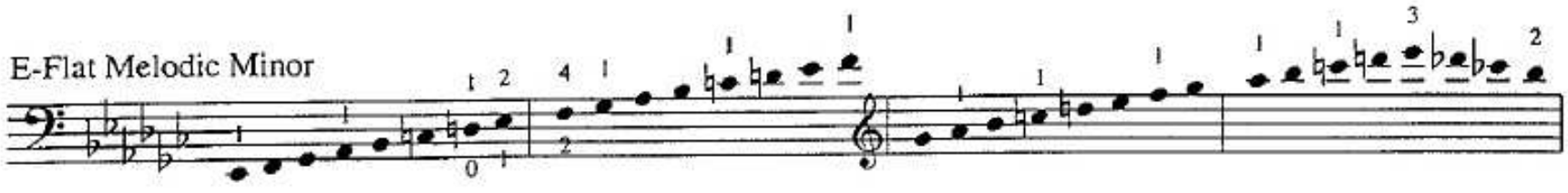


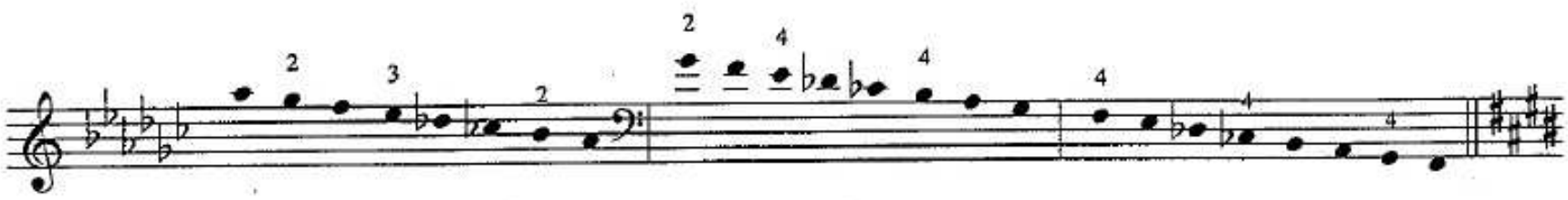
E-Flat Harmonic Minor



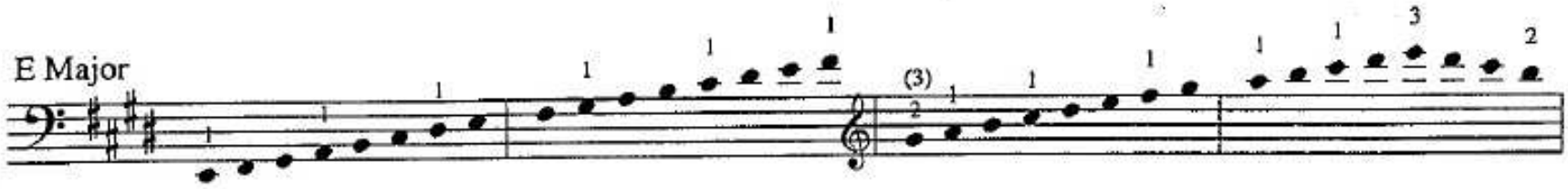


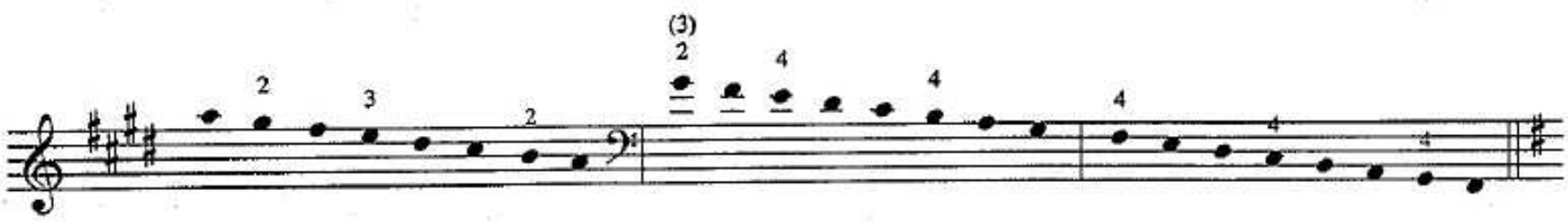
E-Flat Melodic Minor



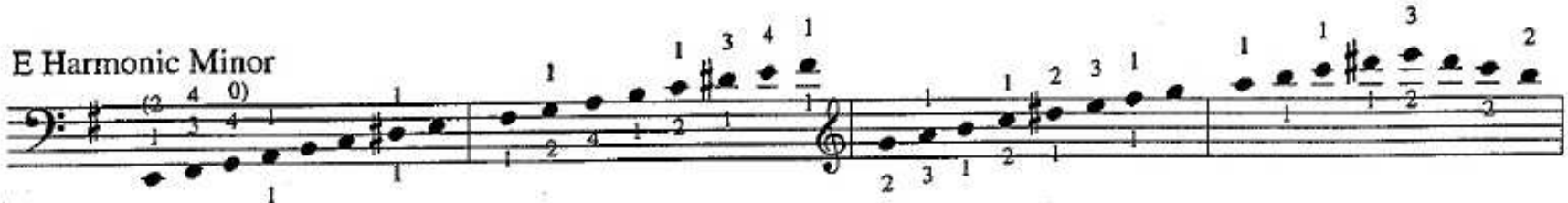


E Major





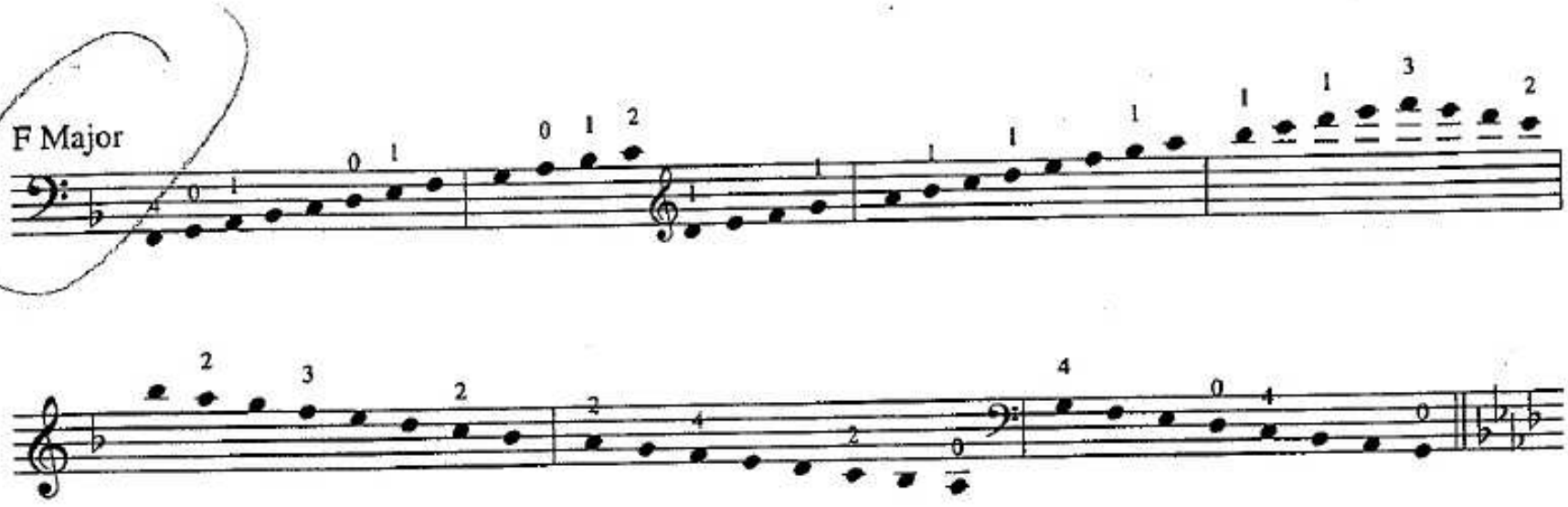
E Harmonic Minor



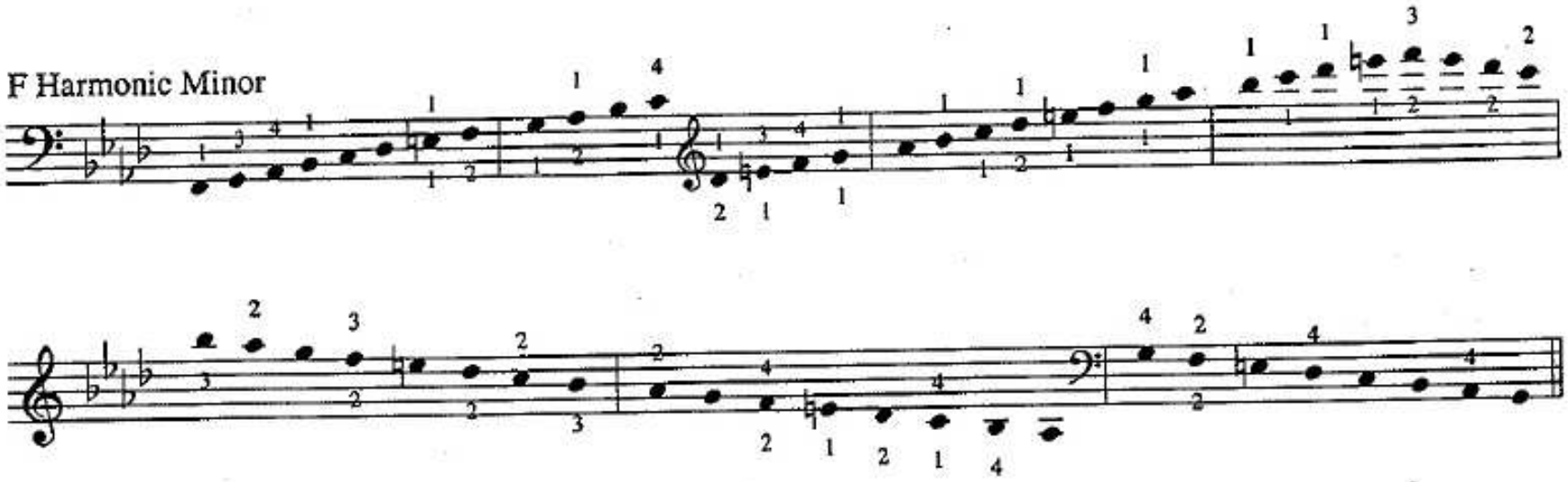
II

E Melodic Minor

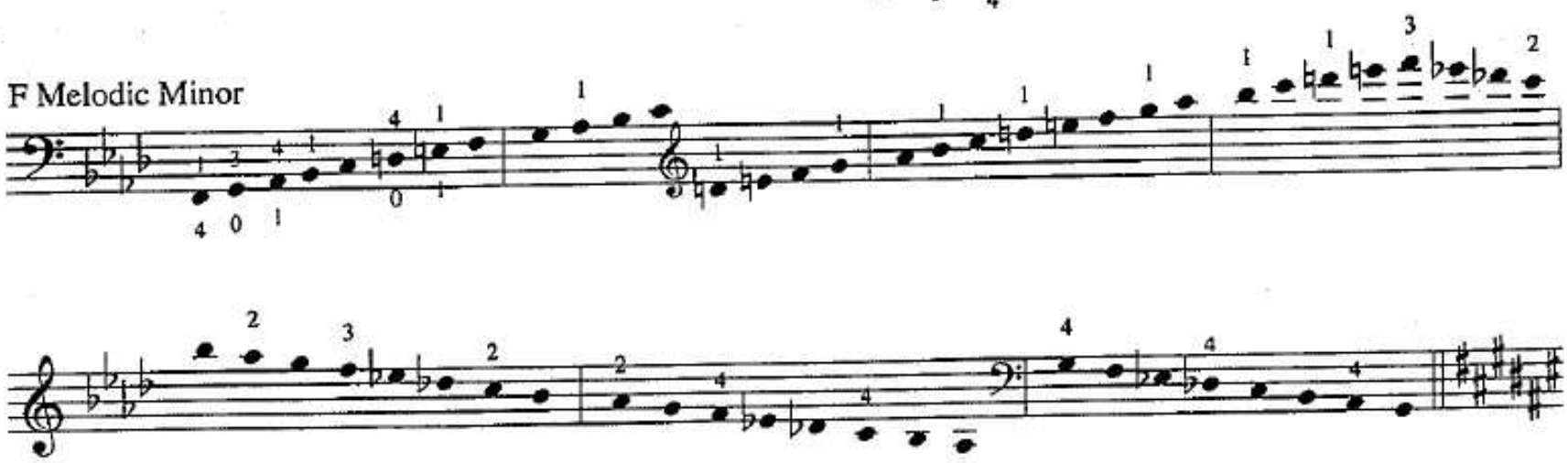
F Major



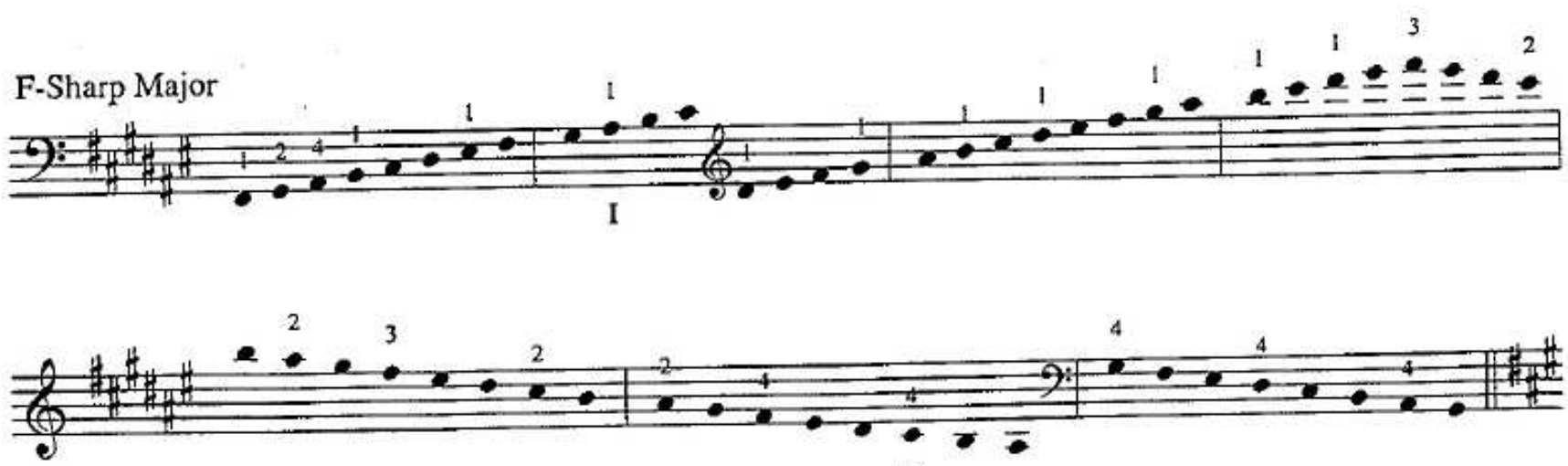
F Harmonic Minor



F Melodic Minor

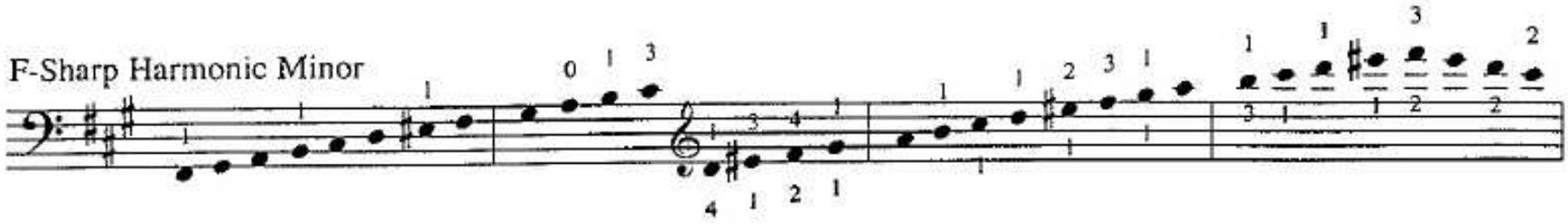


F-Sharp Major



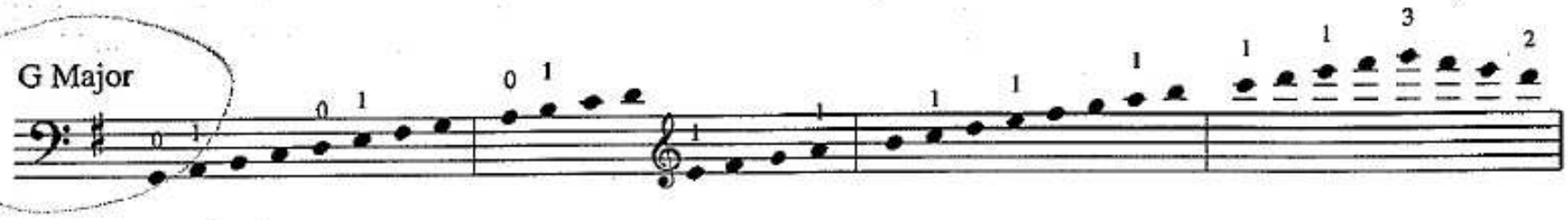
(I)

F-Sharp Harmonic Minor

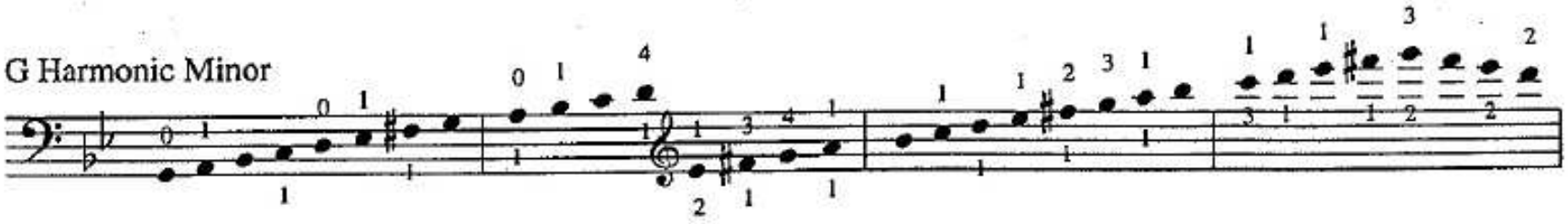


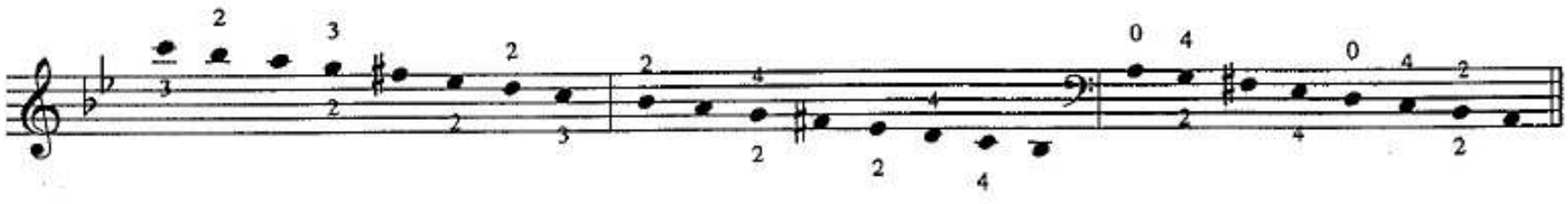
F-Sharp Melodic Minor

G Major

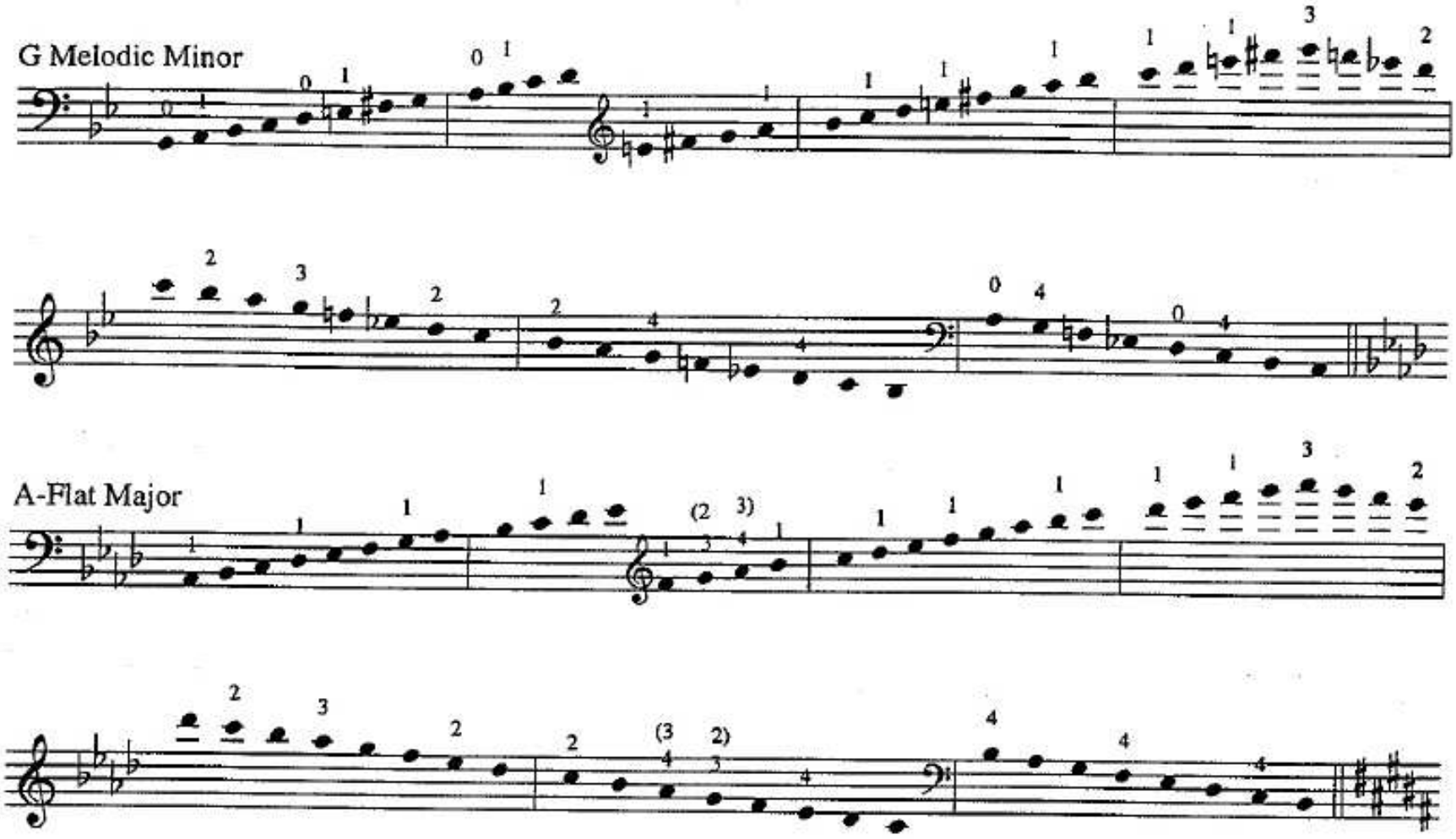


G Harmonic Minor



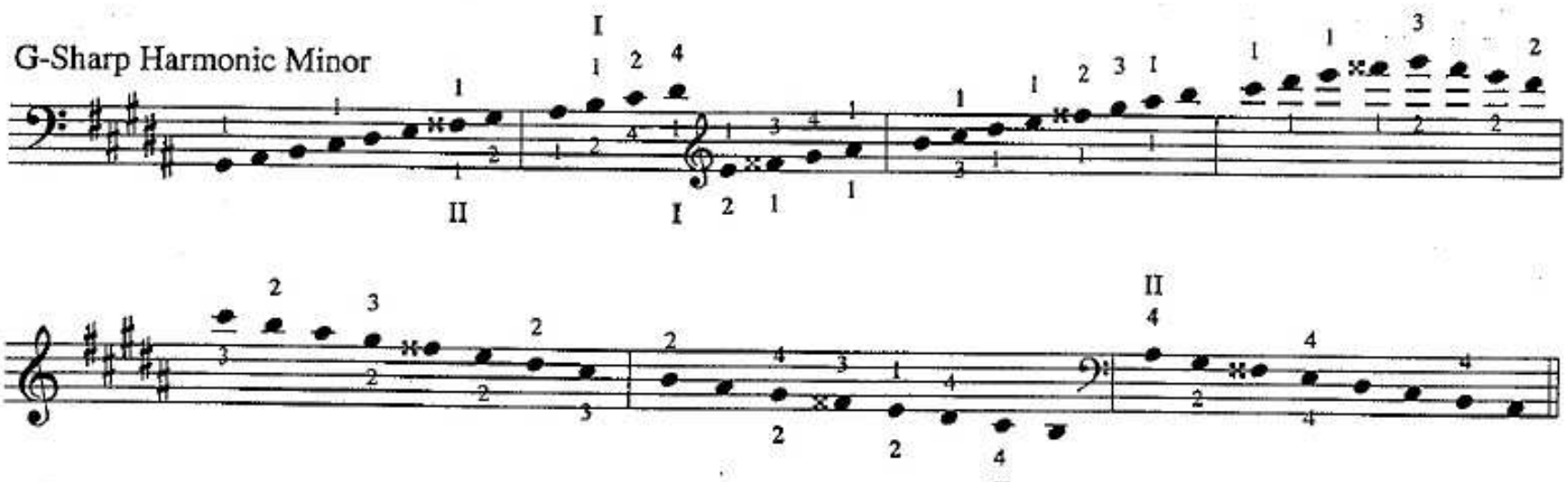


G Melodic Minor

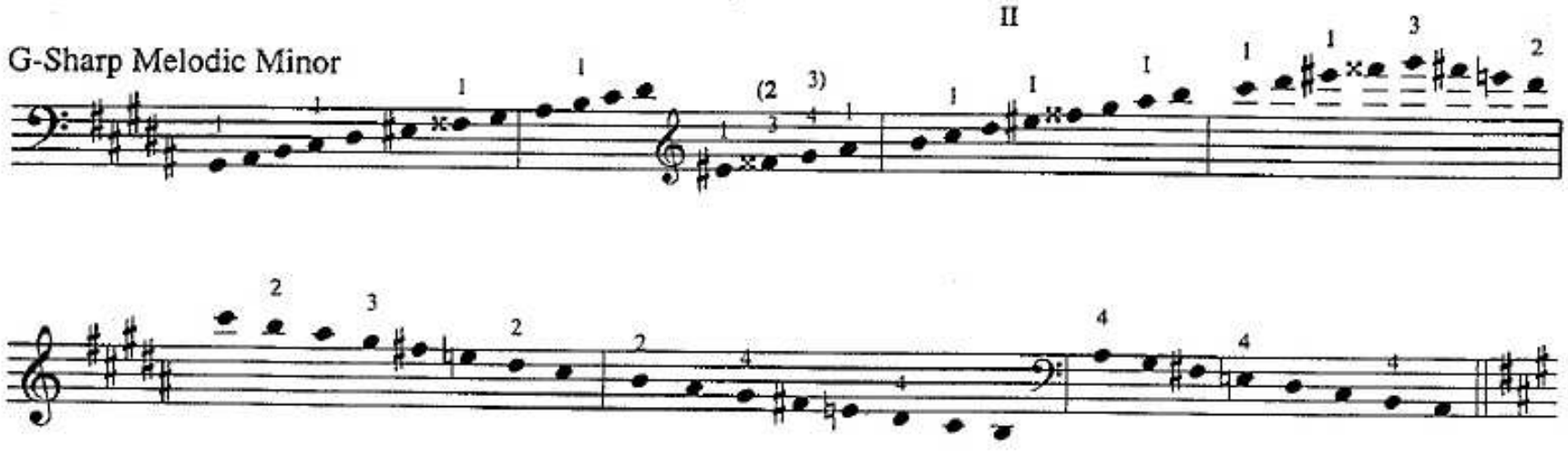


A-Flat Major

G-Sharp Harmonic Minor



G-Sharp Melodic Minor



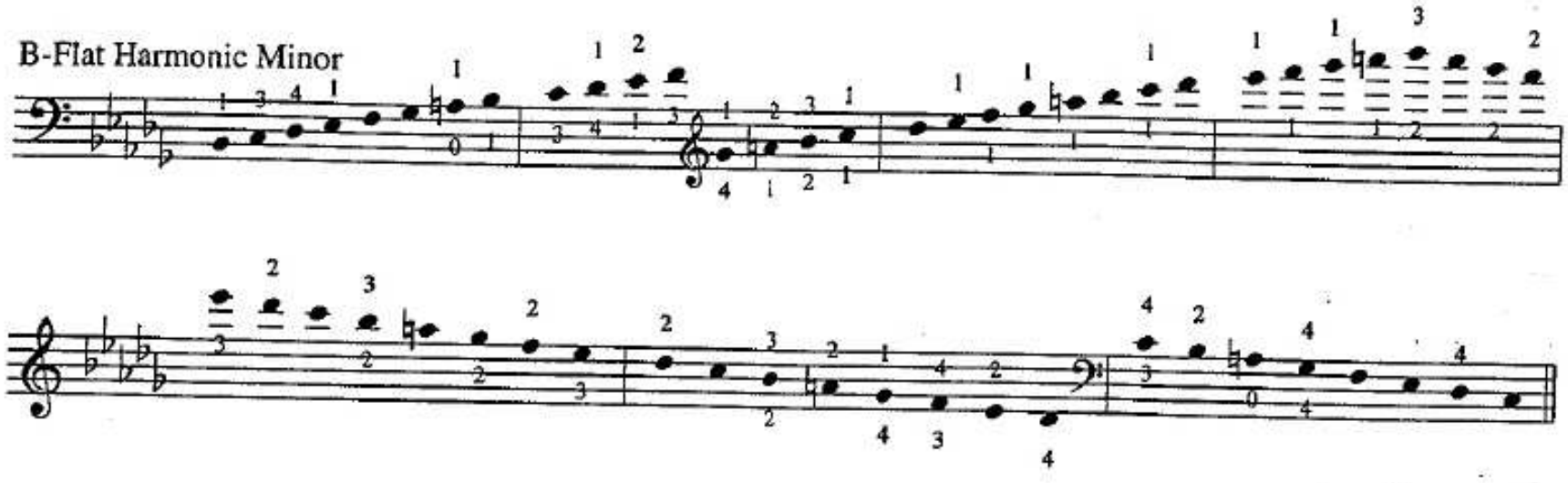
A Major

A Harmonic Minor

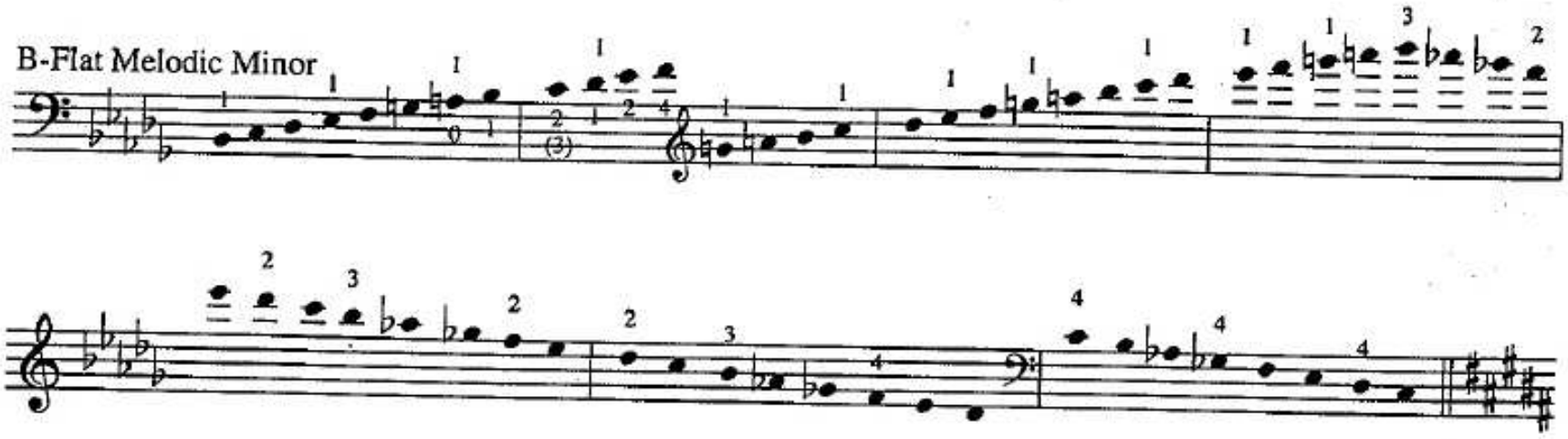
A Melodic Minor

B-Flat Major

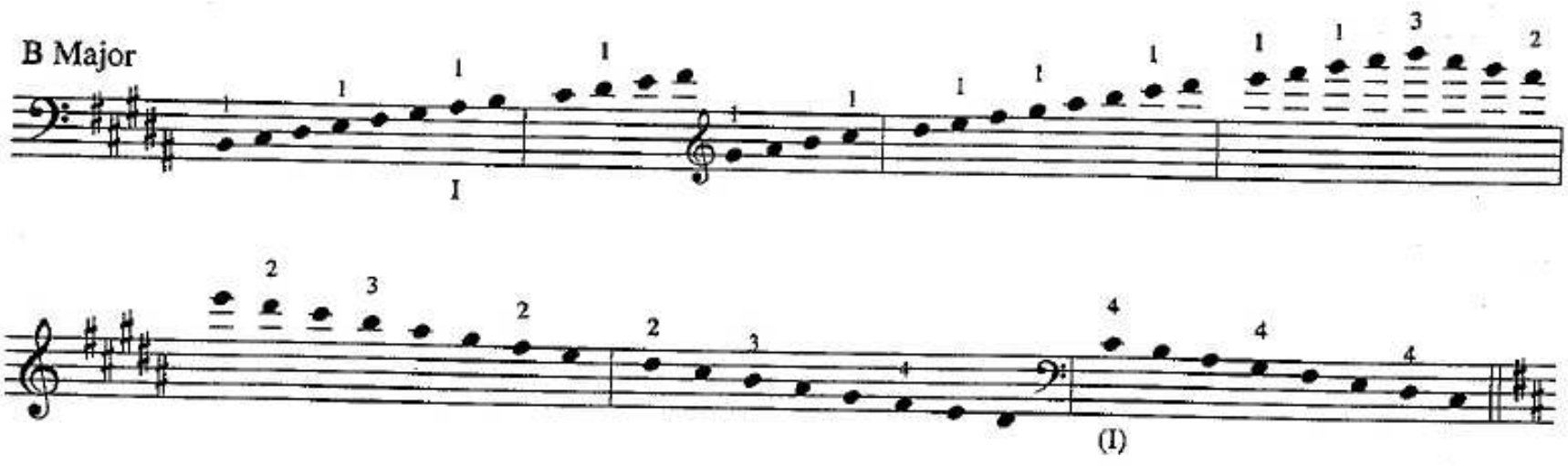
B-Flat Harmonic Minor



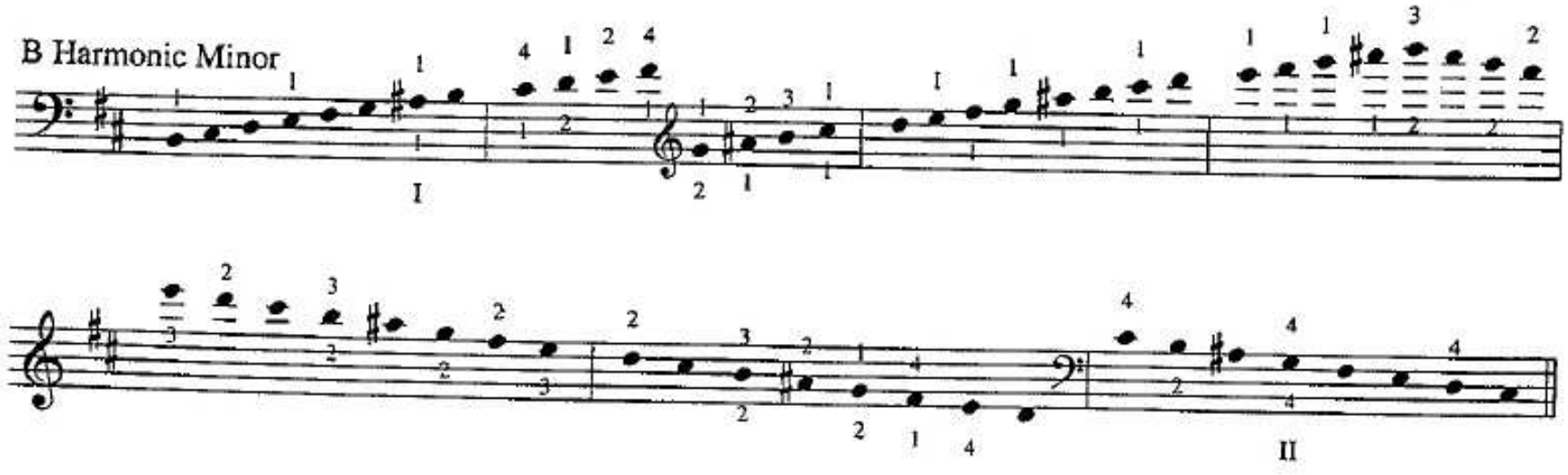
B-Flat Melodic Minor



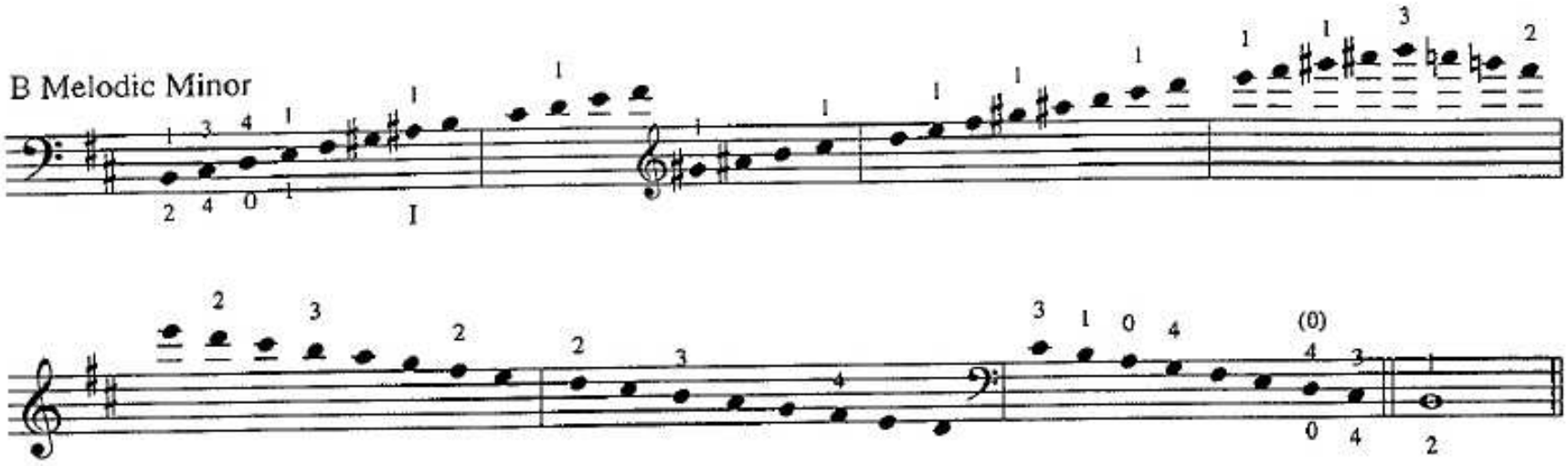
B Major



B Harmonic Minor



B Melodic Minor



Alternate Fingering Systems for Four-Octave Scales.

In addition to the fingerings notated previously in this chapter there are two fingering systems shown in the examples below which can be applied to all four-octave scales, both major and minor. To retain consistency throughout these two systems open strings are not used in any key (with the exception of those beginning on open C.)

System 1 -- Groups of three notes for the entire scale.
The third note in the scale should be played with the first finger. Thereafter, play in groups of three notes.

System 2 -- Groups of three notes for the first two octaves.
Play in groups of three notes from the beginning. For the keys of C and C-Sharp end the second octave with the 4th finger on the D-string. For the keys of D, E-Flat, E, F, F-Sharp, G and A-Flat end the second octave with the 4th finger on the A-string. For the keys of A, B-Flat and B end the second octave with the 3rd finger on the A-string. The upper two octaves are always fingered 1 - 2 - 1 - 2 - 1 - 2 - 3.

Examples:

C Major
System 1:
System 2:

D Major
System 1:
System 2:

D Harmonic Minor
System 1:
System 2:

D Melodic Minor
System 1:
System 2:

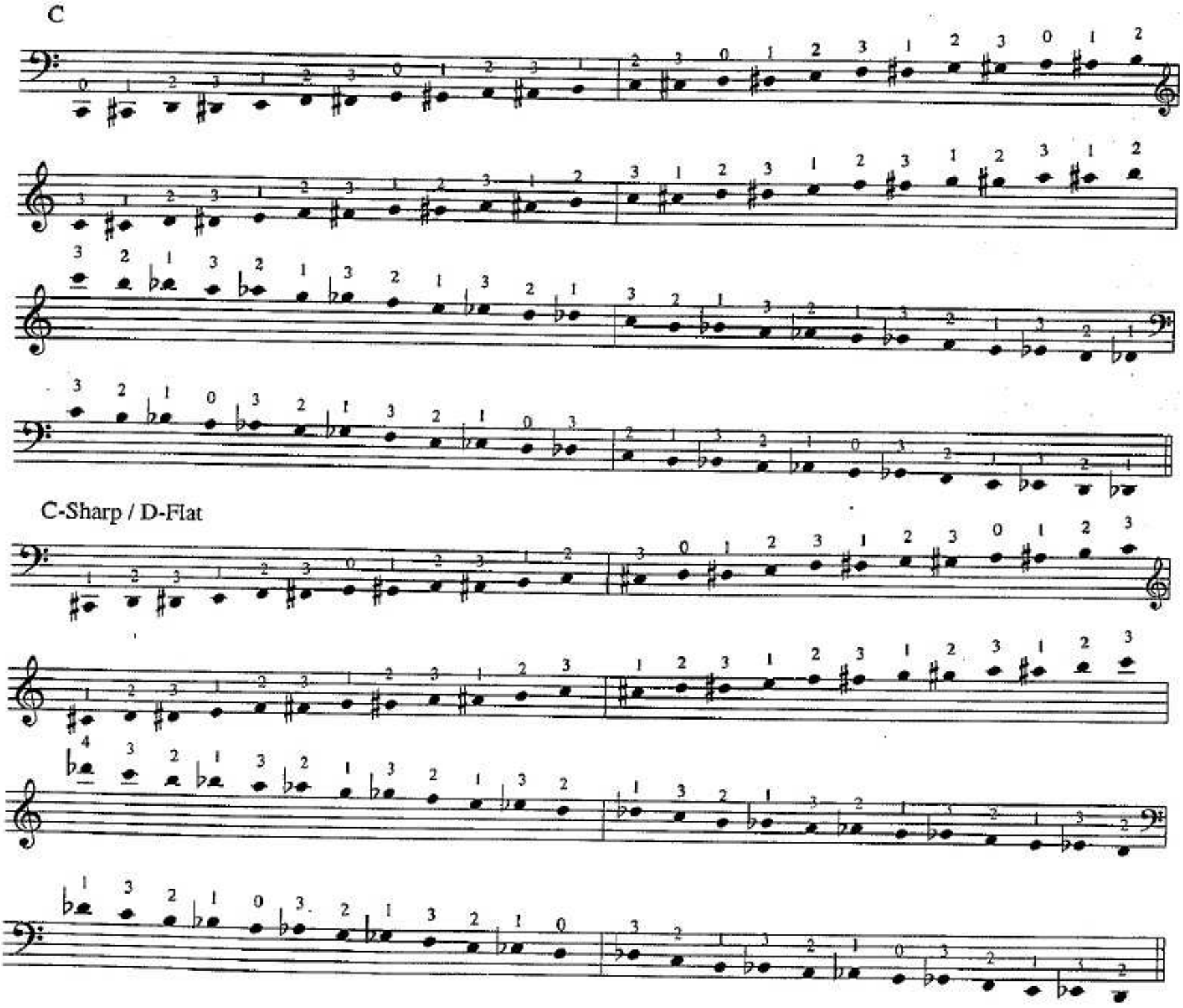
8
Chromatic Scales in Four Octaves

Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

Primary Patterns:

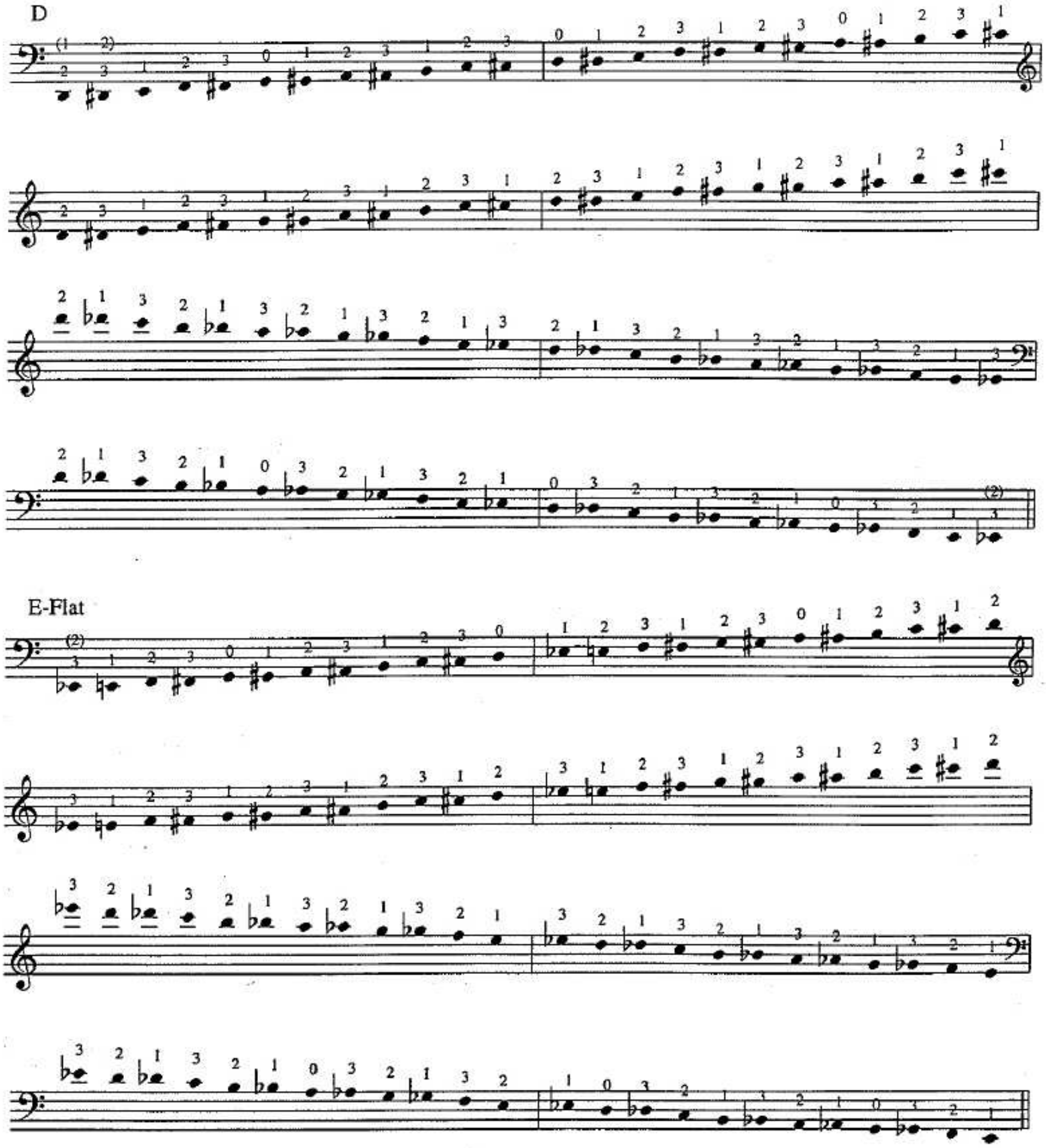
Also slur two measures.

C



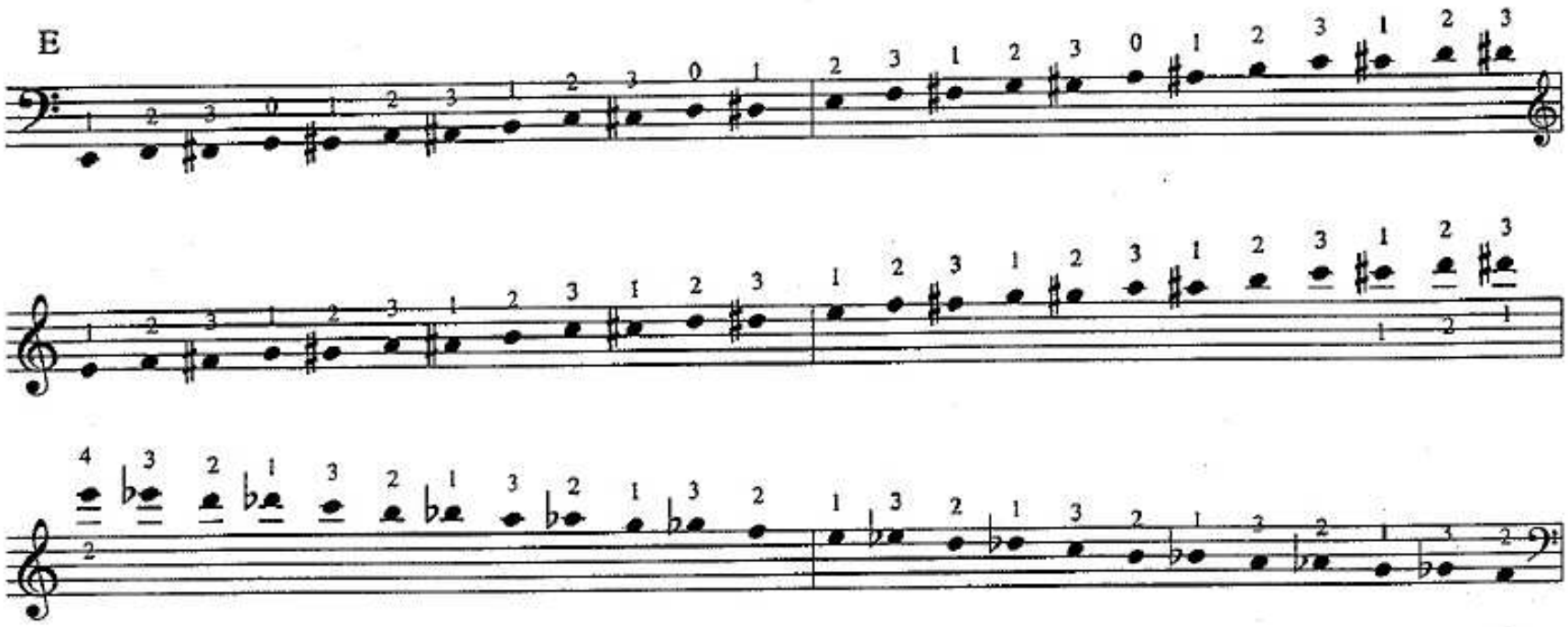
C-Sharp / D-Flat

D

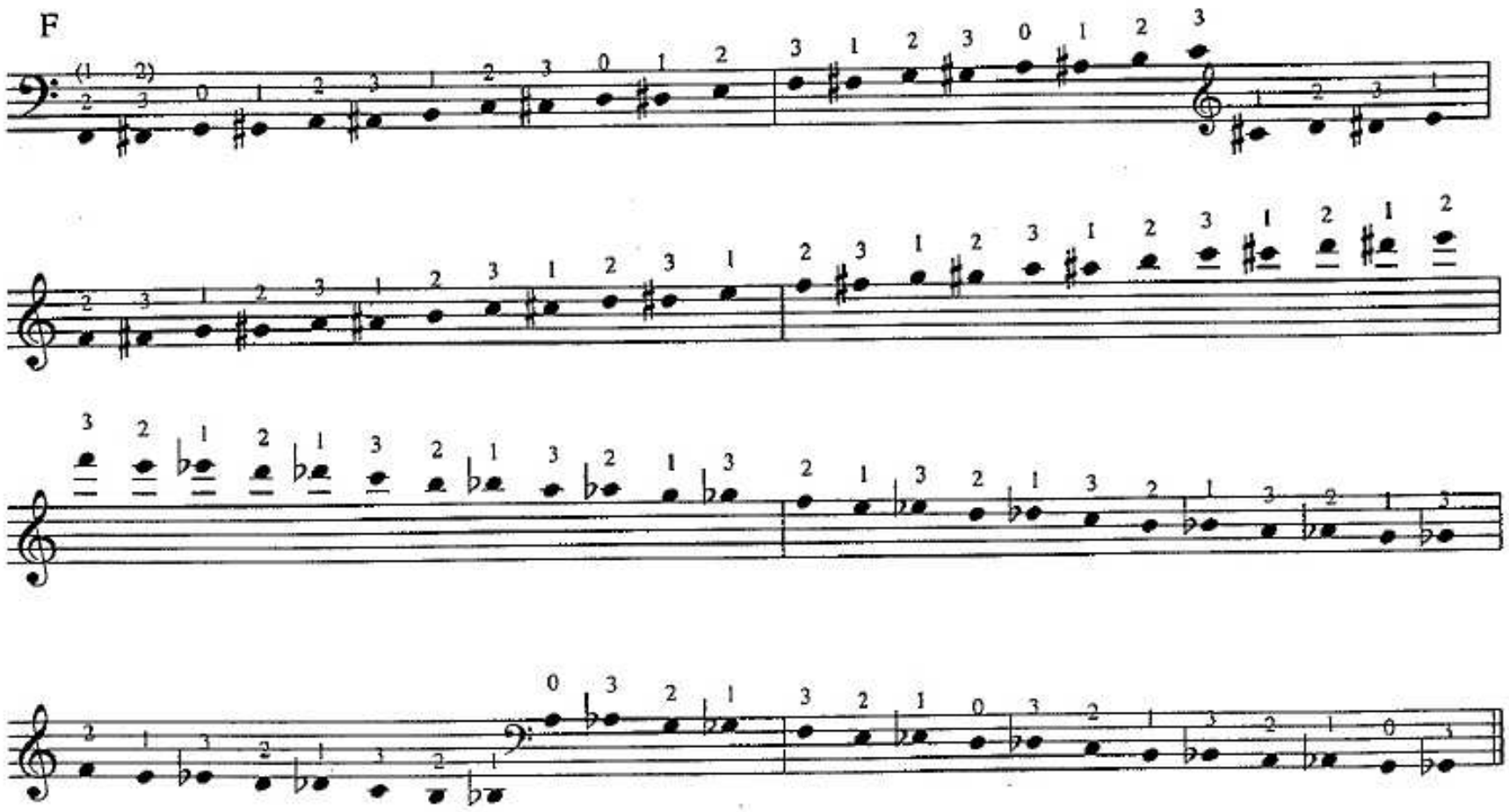


E-Flat

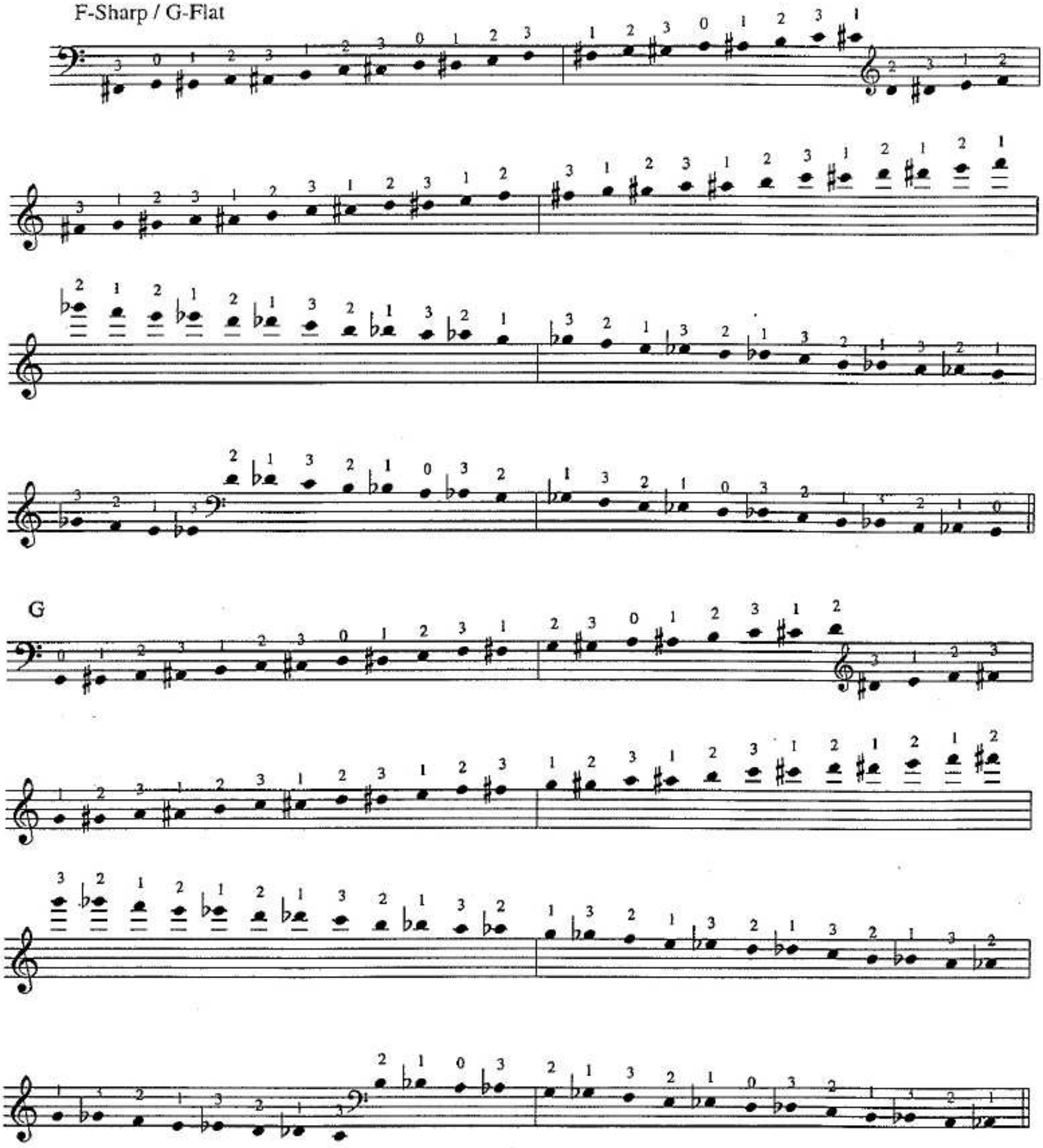
E



F

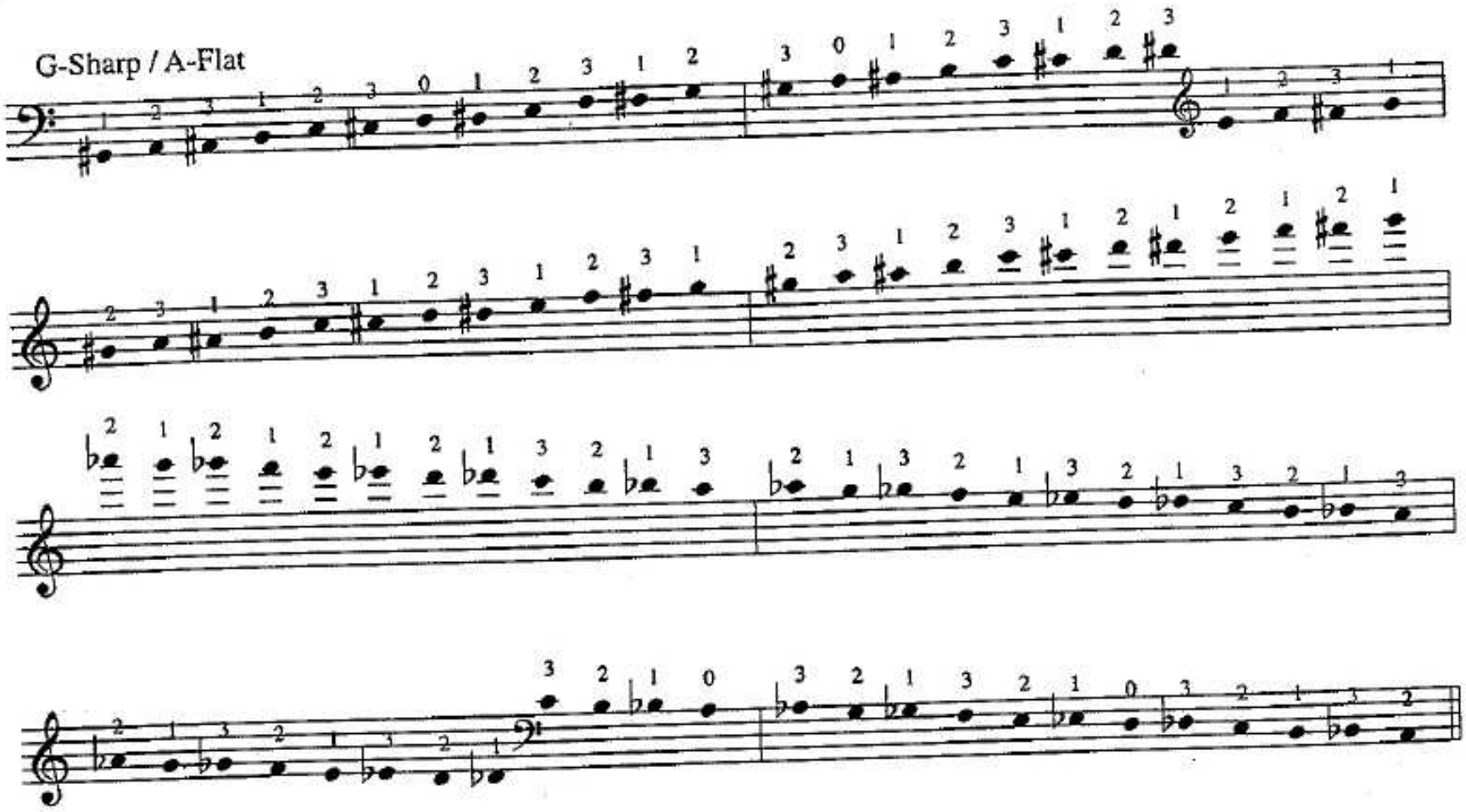


F-Sharp / G-Flat

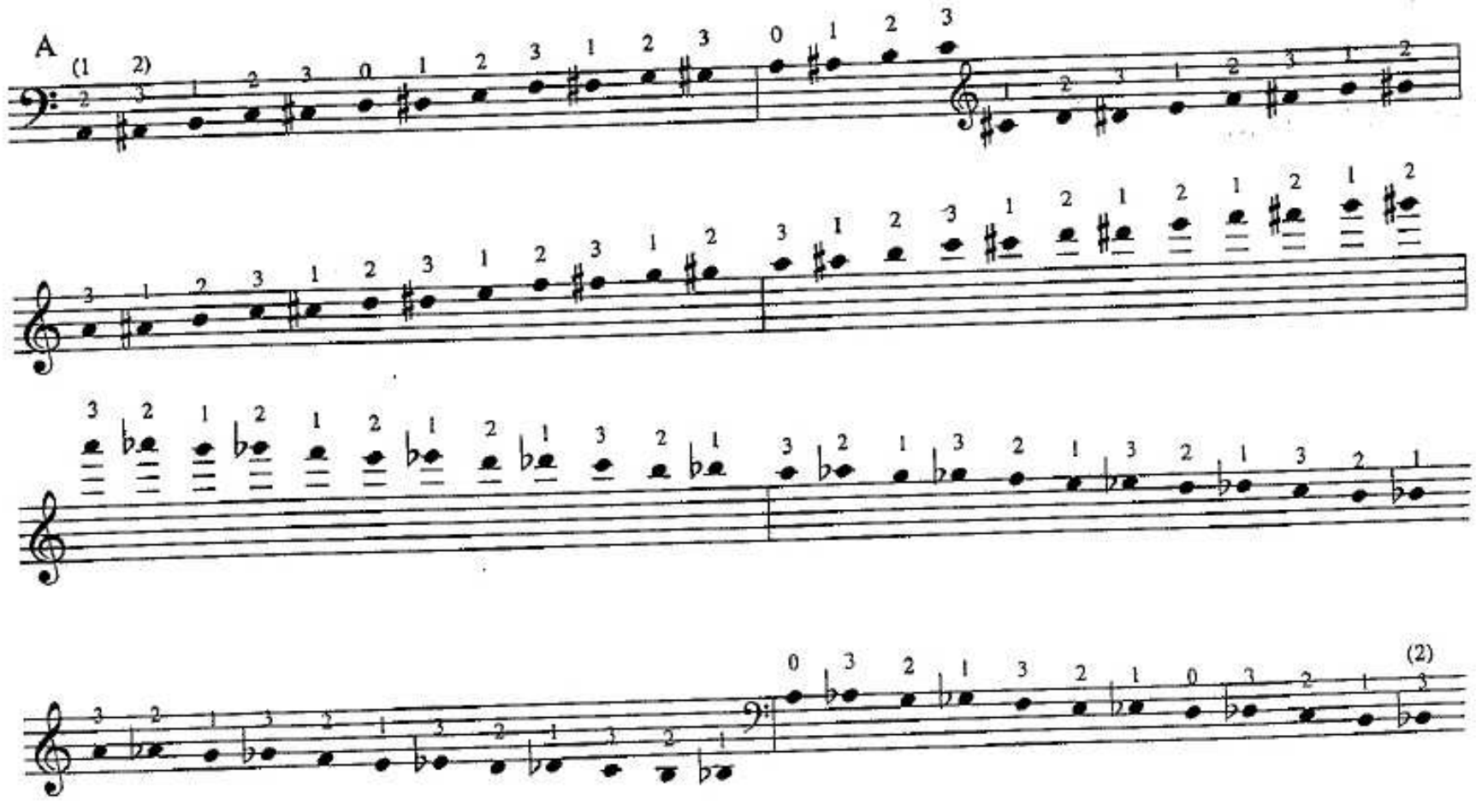


G

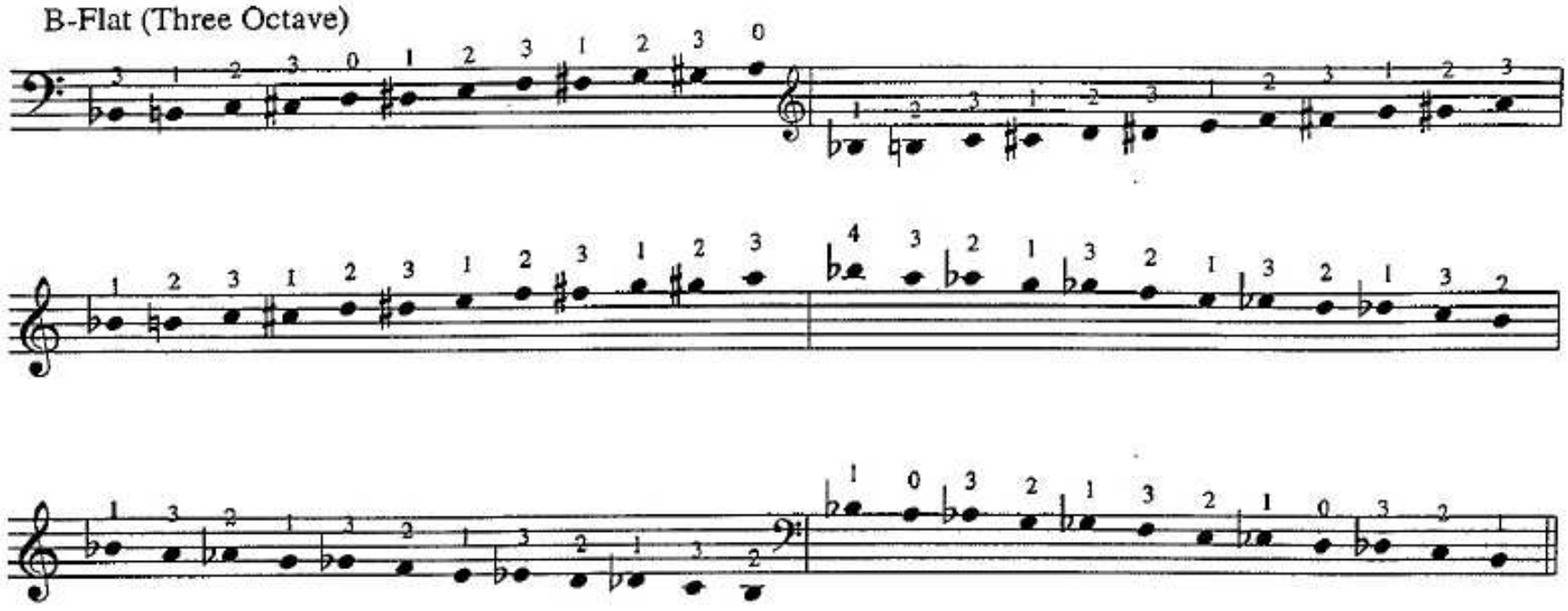
G-Sharp / A-Flat



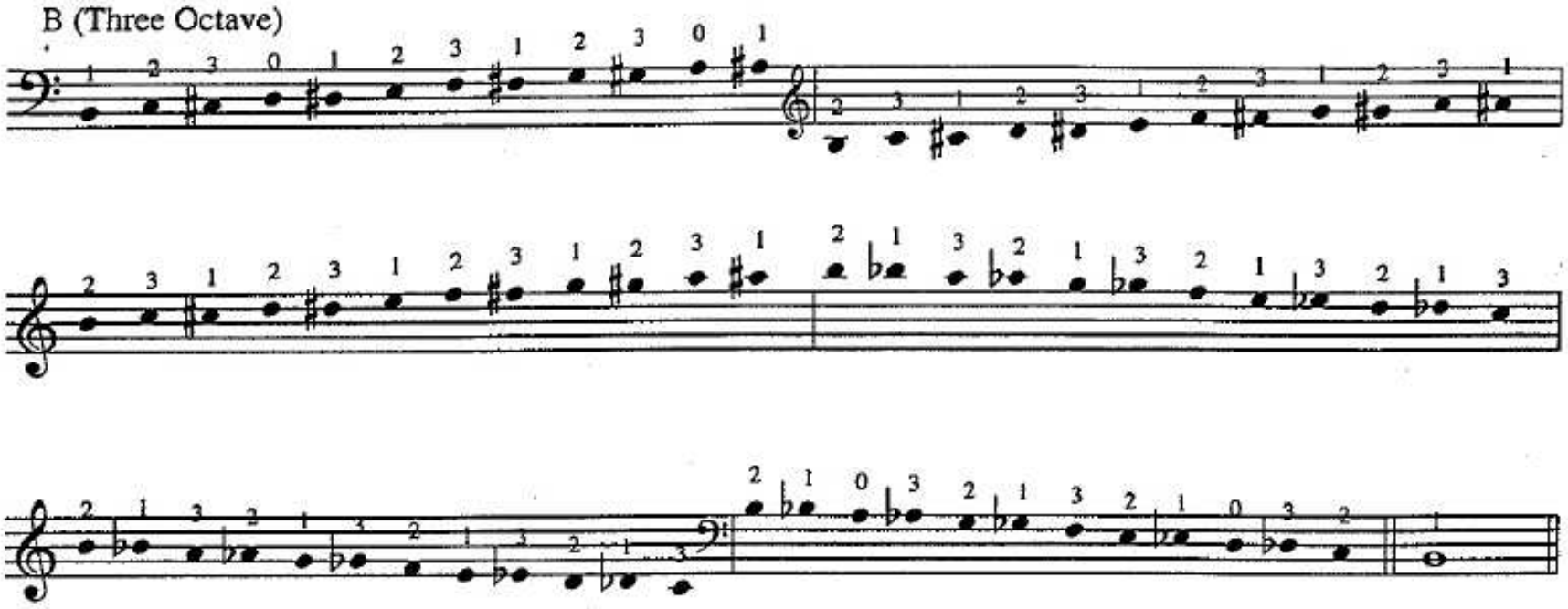
A



B-Flat (Three Octave)



B (Three Octave)



9
Four-Octave Arpeggios

Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

Primary Patterns:

Four-octave arpeggios should also be studied as acceleration exercises. For arpeggios containing twelve notes use 2, 3, 6 and 12 notes to the bow. For arpeggios containing sixteen notes (Diminished Seventh and Dominant Seventh) use 2, 4, 8 and 16 notes to the bow. For an explanation of acceleration exercises please turn to page 11.

Explanation of Fingerings:

I. The Major and Minor Arpeggios have two basic fingering systems notated :

A) *Above the Staff*
For the top octave two different fingerings are suggested: 1 - 3 - 1 - 3 and thumb - 1 - 2 - 3 . The second of these is notated only in the keys of C and D-Flat (pages 56 and 57) but should be used in all keys.

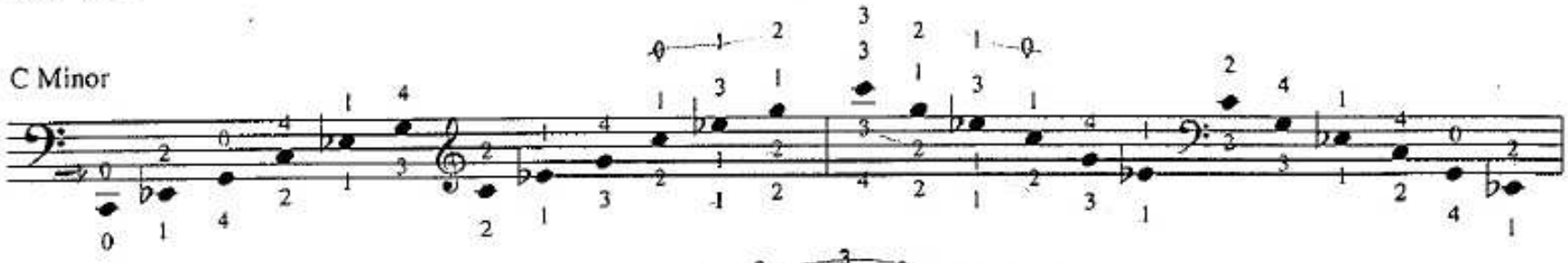
B) *Below the Staff (These fingerings are also used in Chapter 6, "Three Octave Arpeggios.")*
These fingerings are the standard fingerings for the Four-Octave Arpeggios and are the same for all keys. Play three notes on the C string, three notes on the G string, three notes on the D string, and the last four notes on the A string. Two fingerings can be used for the last four notes on the A-string: 2 - 1 - 2 - 3 or 2 - 1 - 2 - 4 . The second of these is notated only in the keys of C and D-Flat (pages 56 and 57) but should be used in all keys.

II. The Subdominant Six-Four and the Minor Subdominant Six-Four

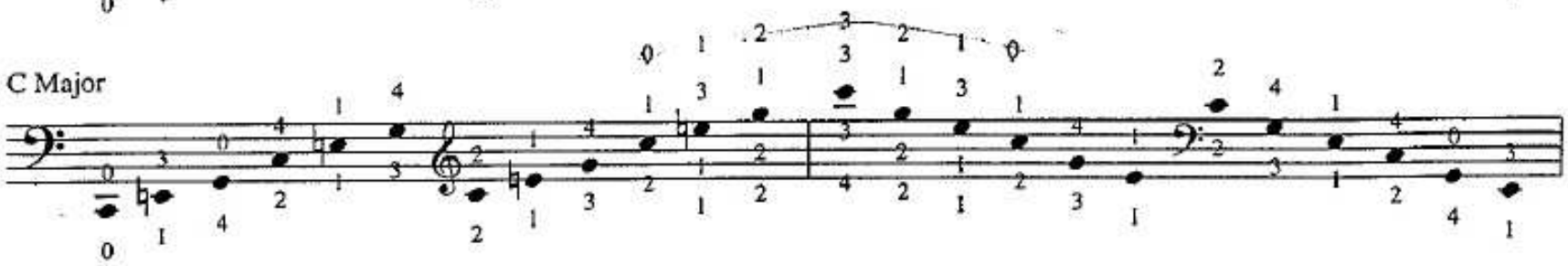
Below the staff: These fingerings are created to develop the use of the thumb.

Key of C

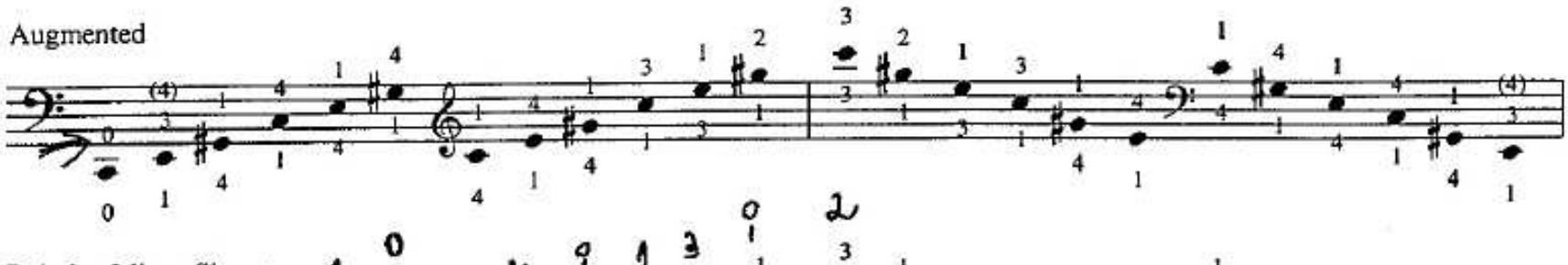
C Minor



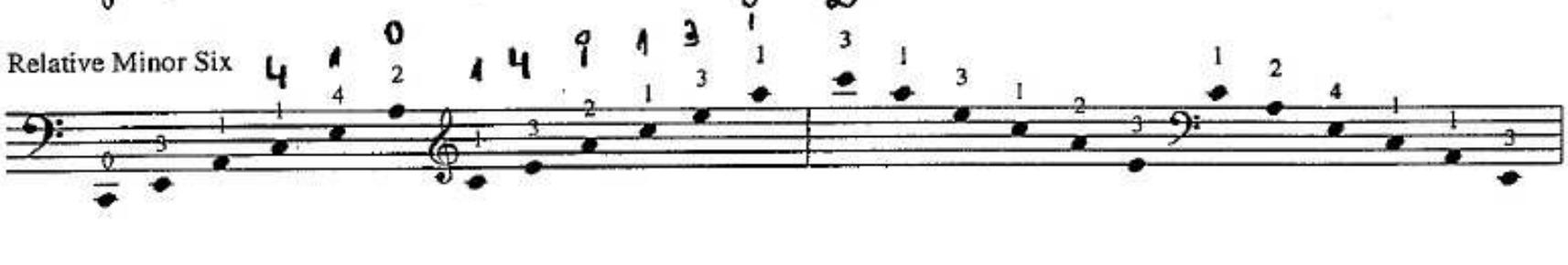
C Major



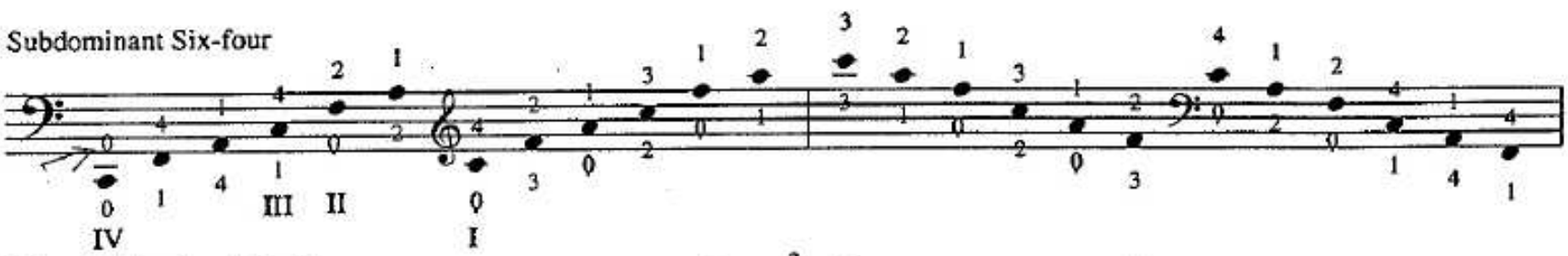
Augmented



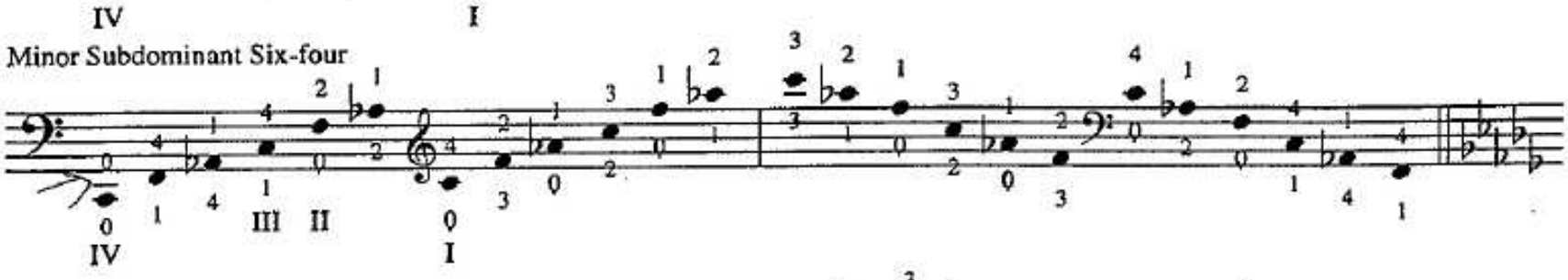
Relative Minor Six



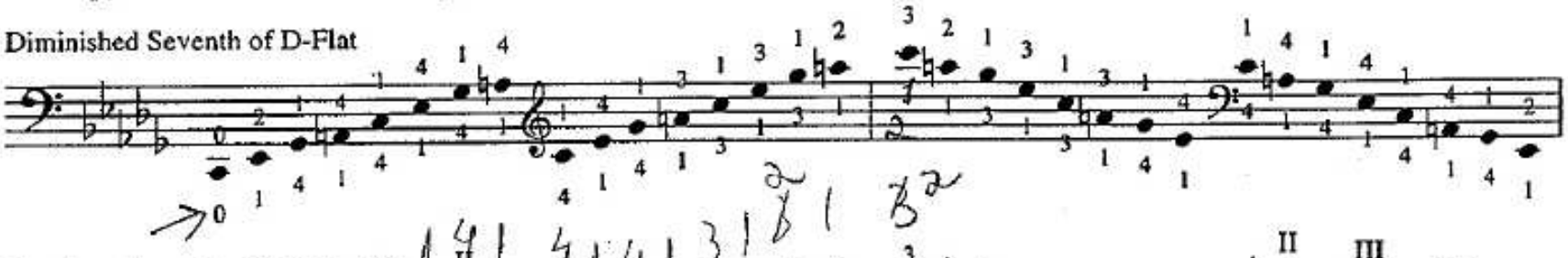
Subdominant Six-four



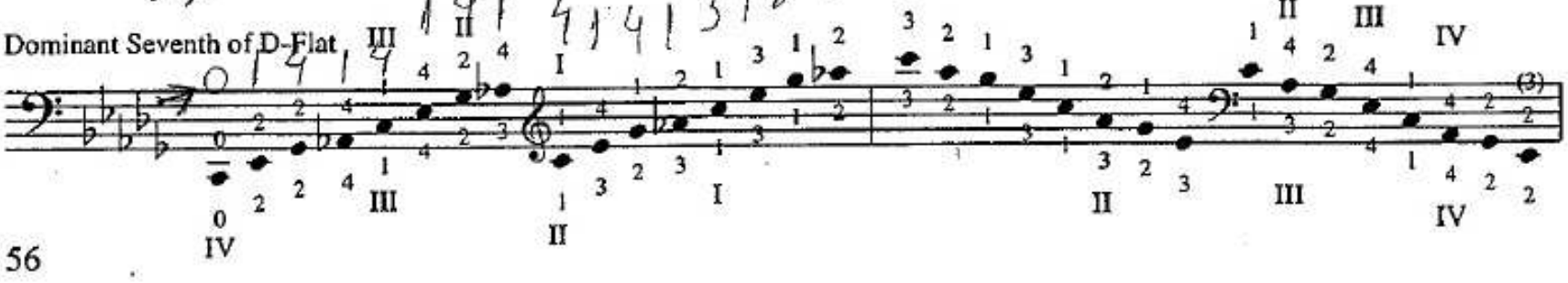
Minor Subdominant Six-four



Diminished Seventh of D-Flat

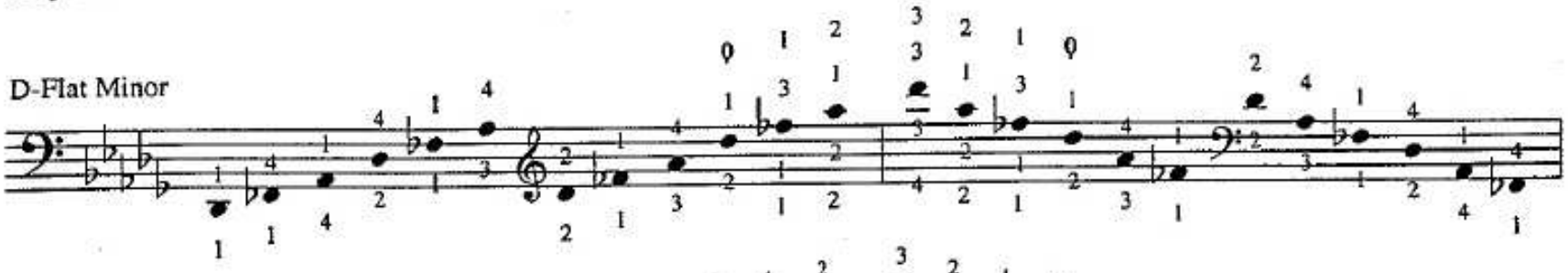


Dominant Seventh of D-Flat

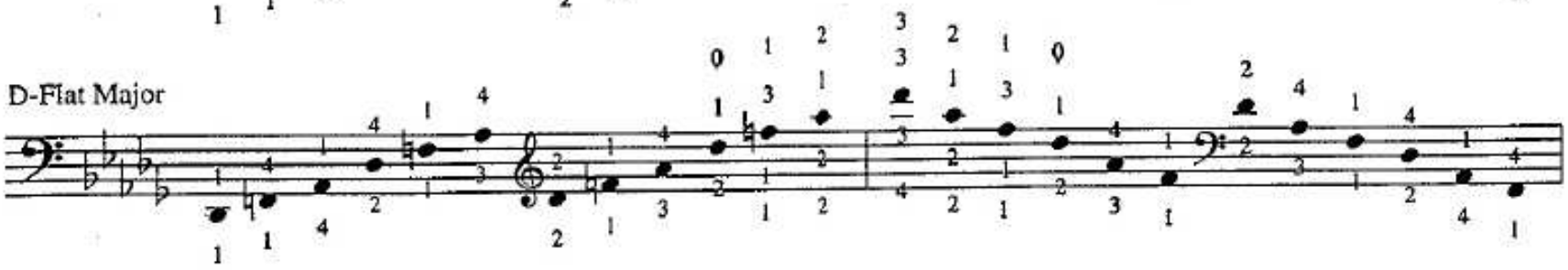


Key of D-Flat

D-Flat Minor



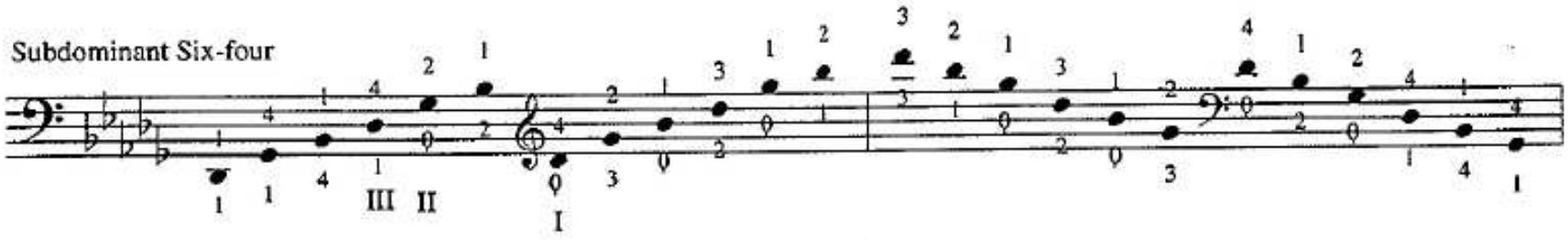
D-Flat Major



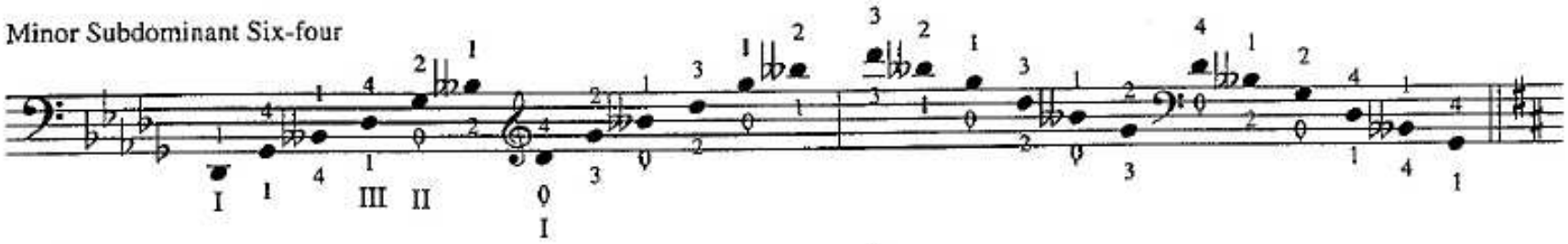
Augmented

Relative Minor Six

Subdominant Six-four

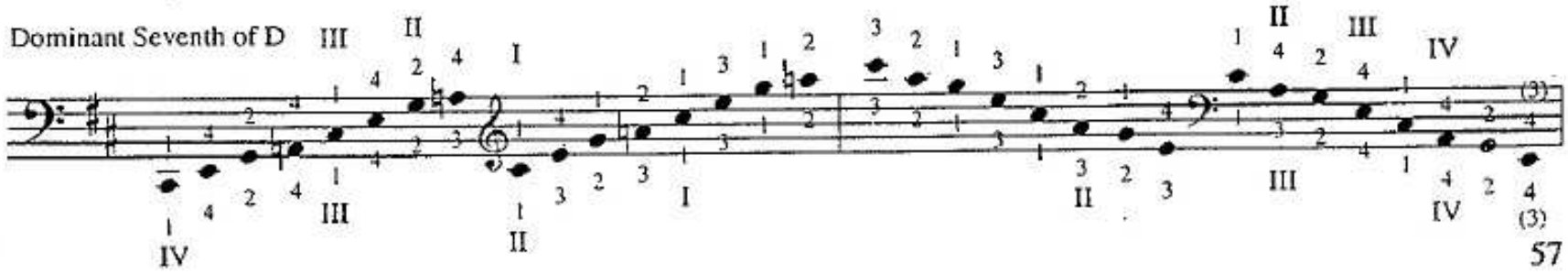


Minor Subdominant Six-four



Diminished Seventh of D

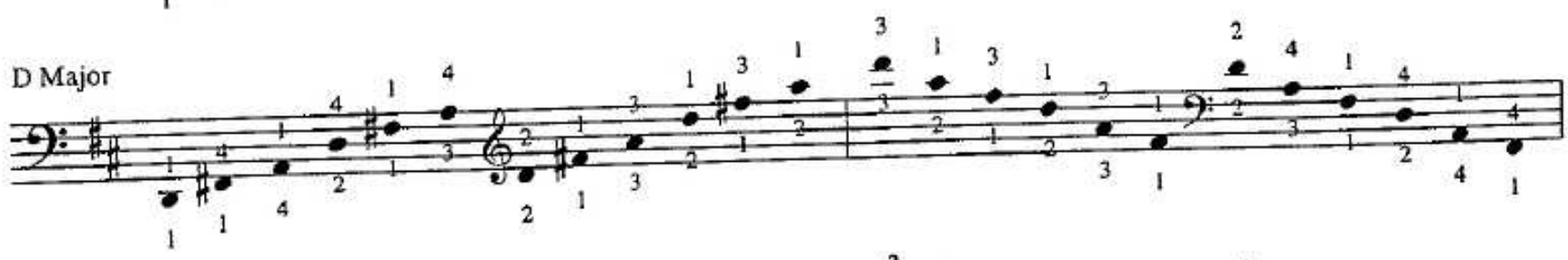
Dominant Seventh of D



Key of D

D Minor

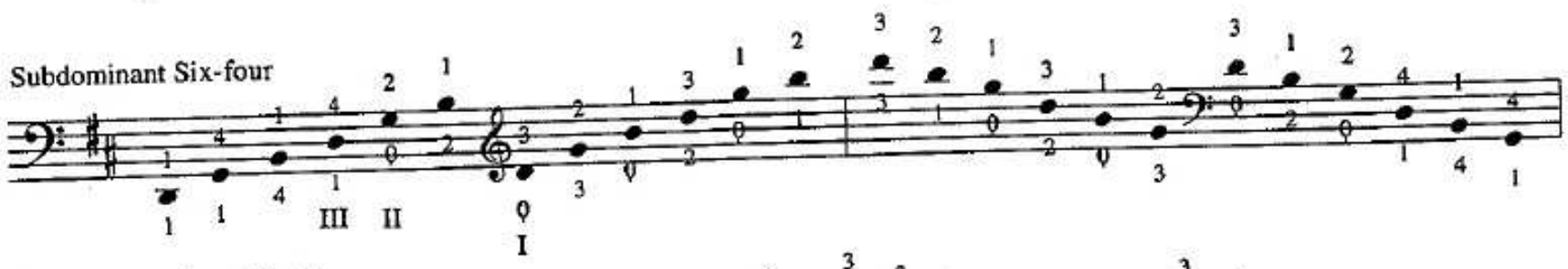
D Major



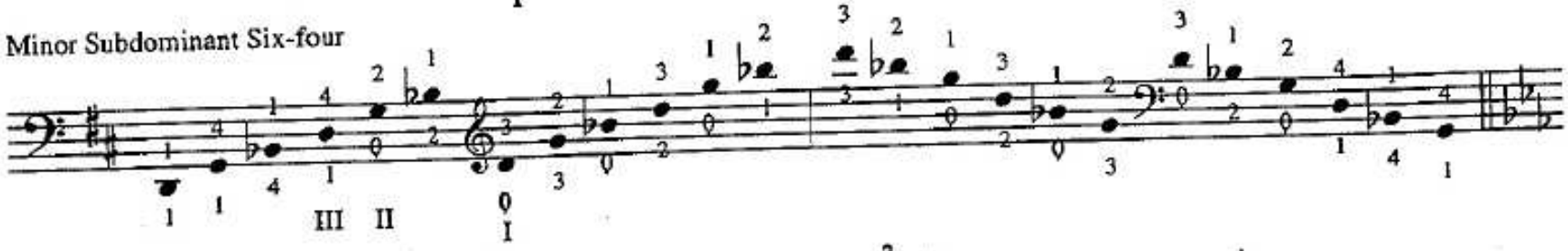
Augmented

Relative Minor Six

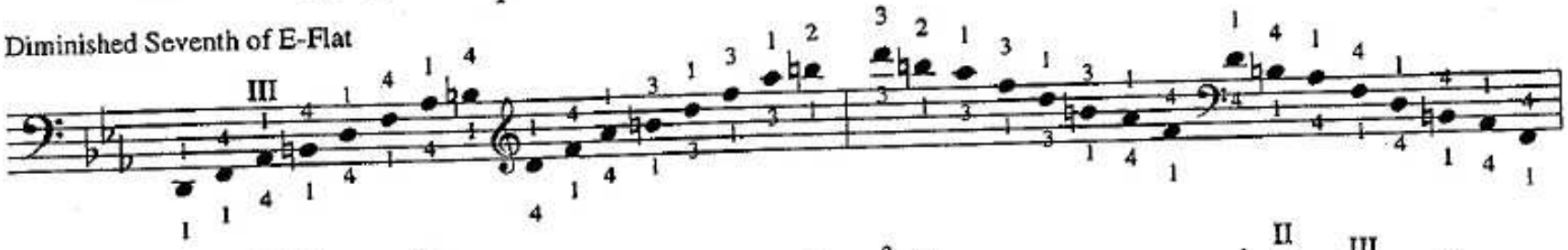
Subdominant Six-four



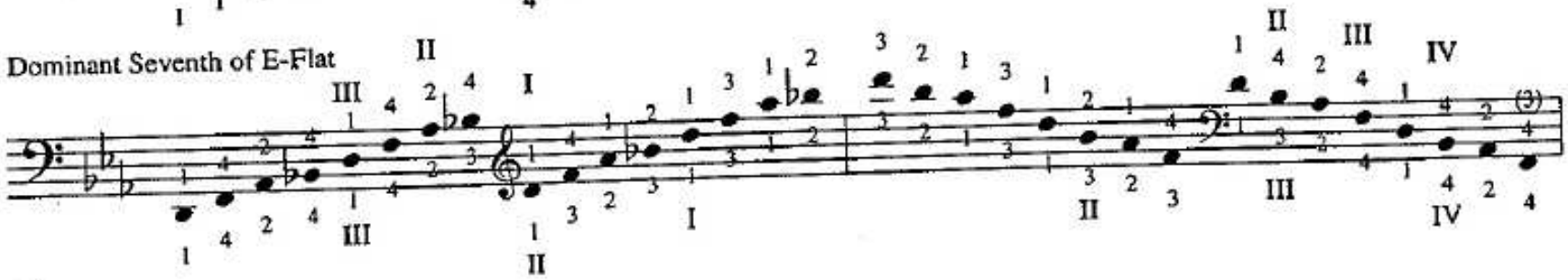
Minor Subdominant Six-four



Diminished Seventh of E-Flat

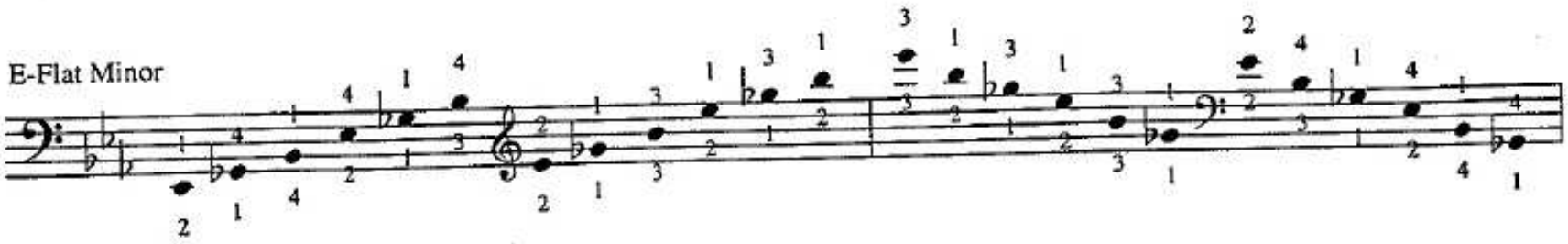


Dominant Seventh of E-Flat



Key of E-Flat

E-Flat Minor

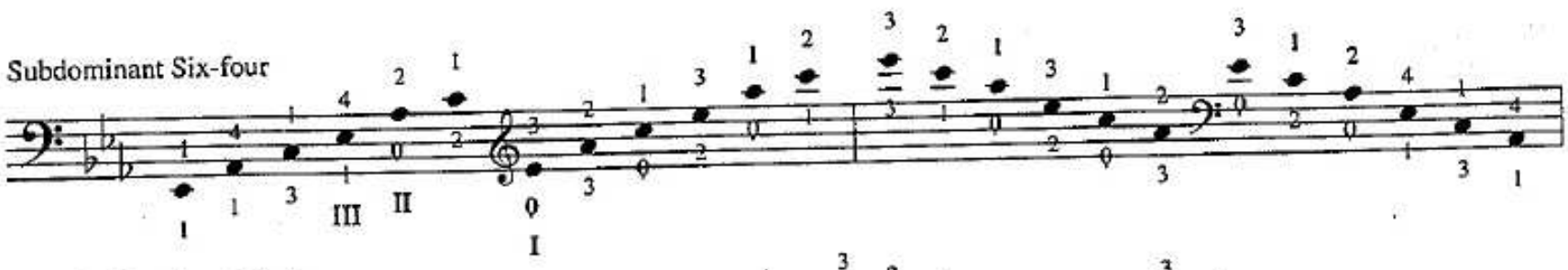


E-Flat Major

Augmented

Relative Minor Six

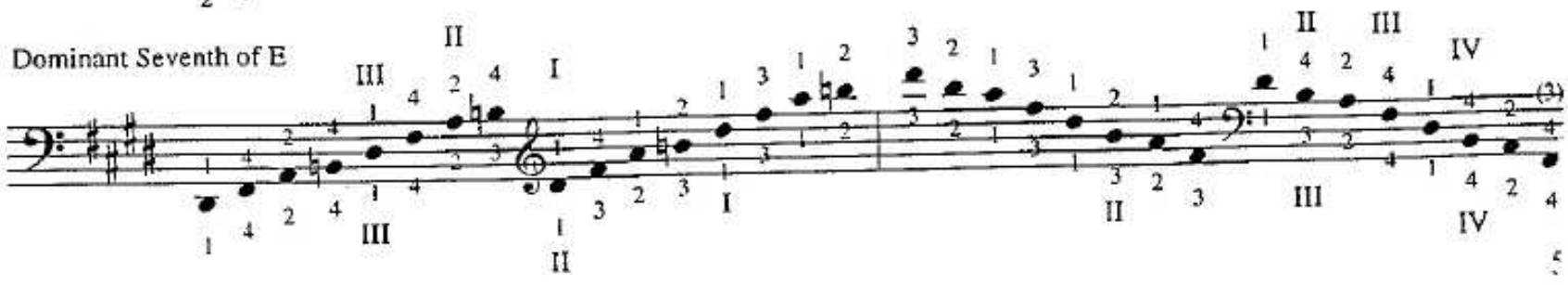
Subdominant Six-four



Minor Subdominant Six-four

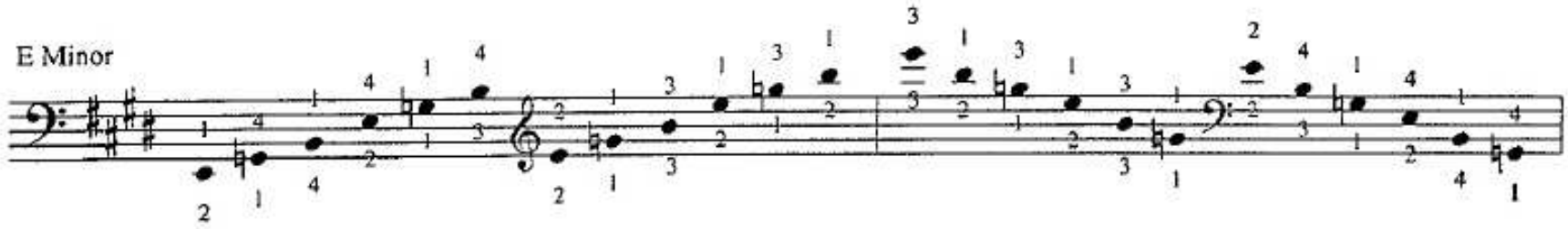
Diminished Seventh of E

Dominant Seventh of E



Key of E

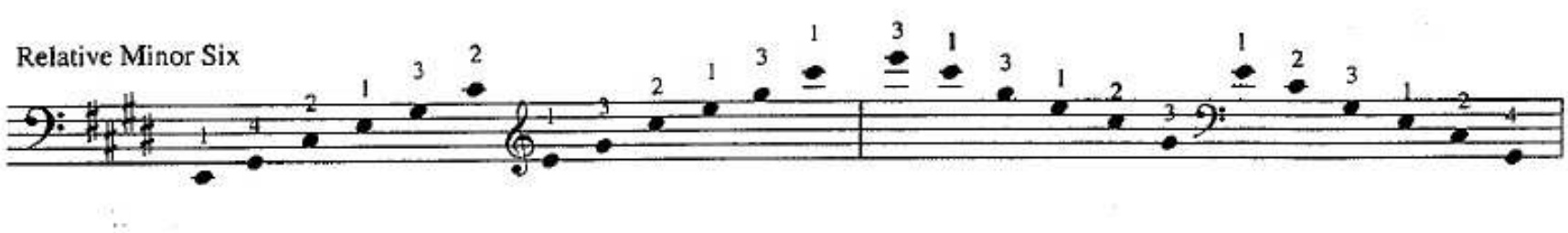
E Minor



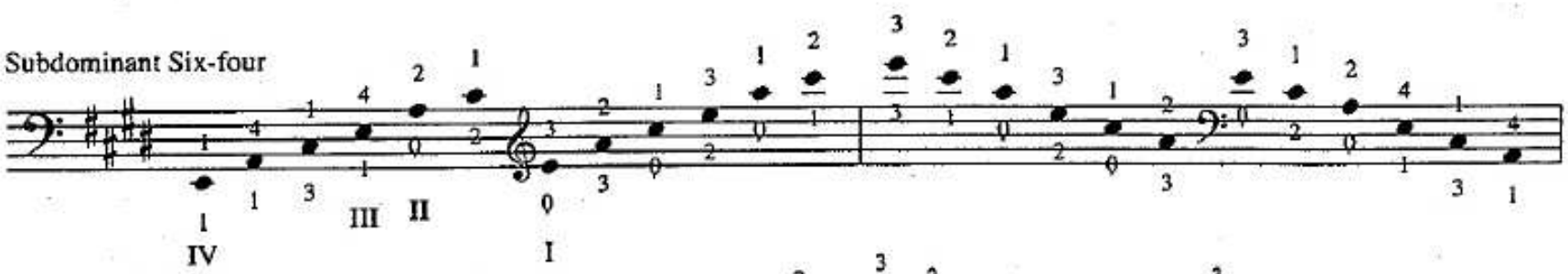
E Major

Augmented

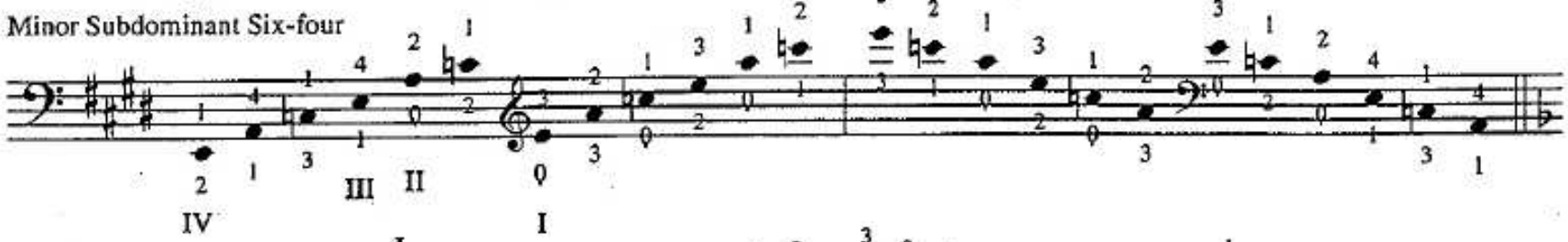
Relative Minor Six



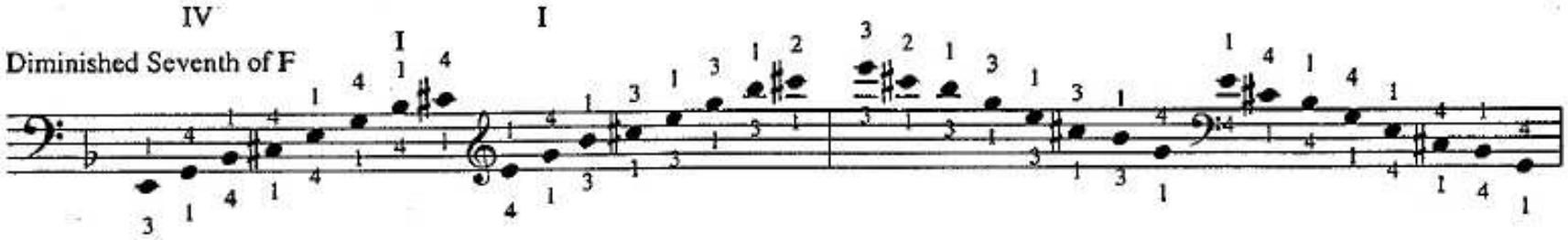
Subdominant Six-four



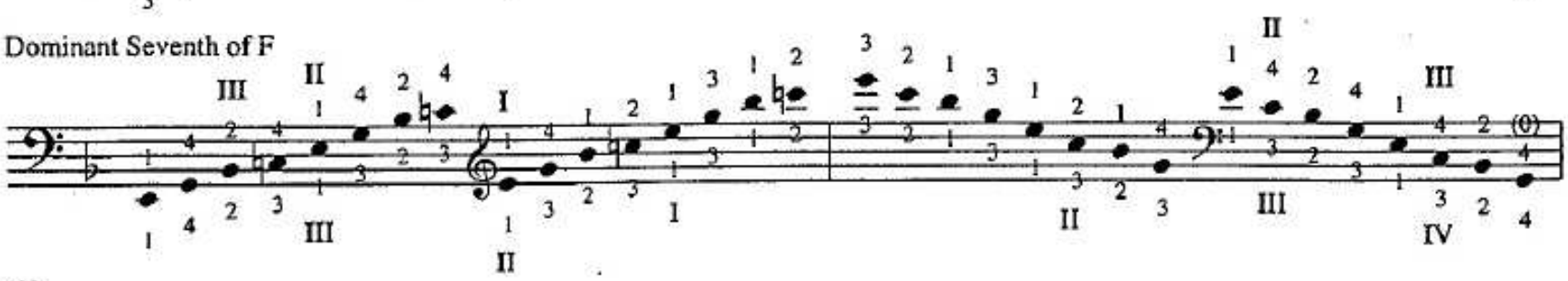
Minor Subdominant Six-four



Diminished Seventh of F



Dominant Seventh of F



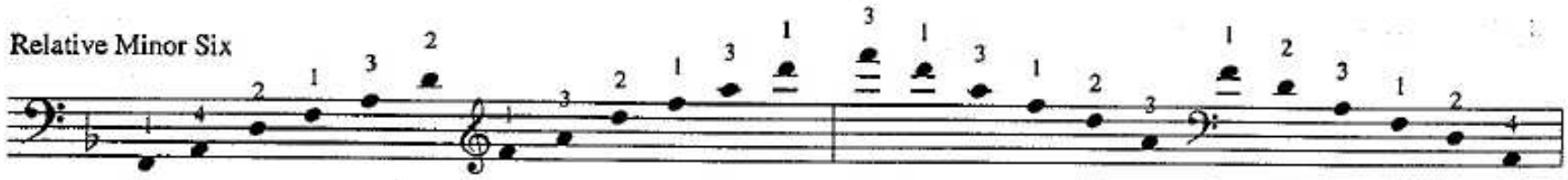
Key of F

F Minor

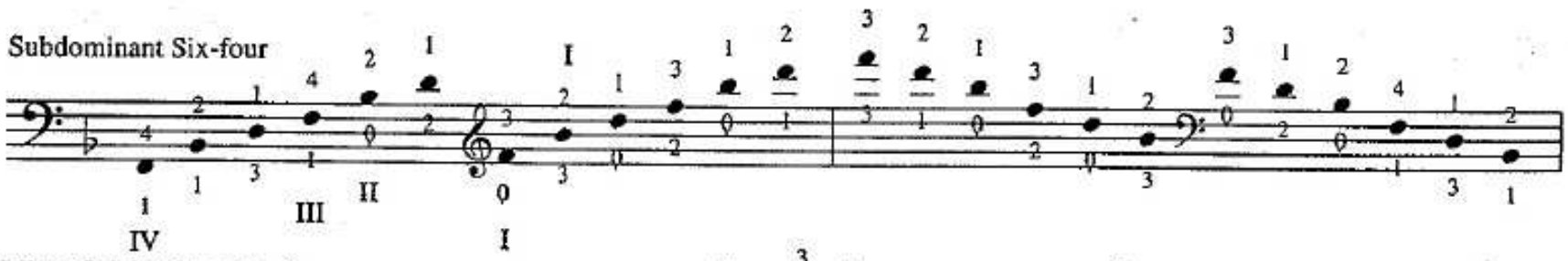
F Major

Augmented

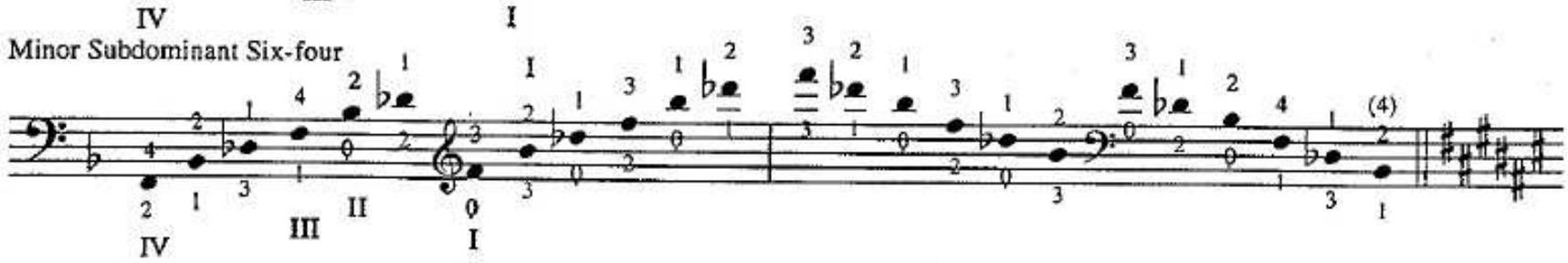
Relative Minor Six



Subdominant Six-four

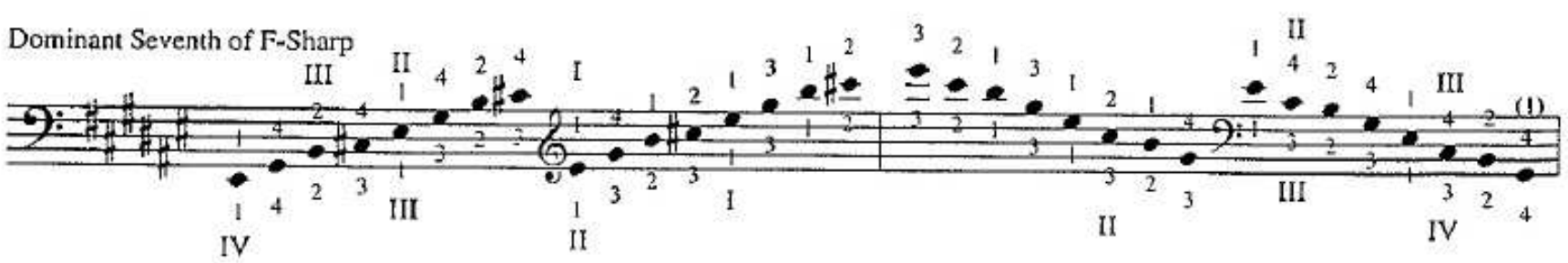


Minor Subdominant Six-four



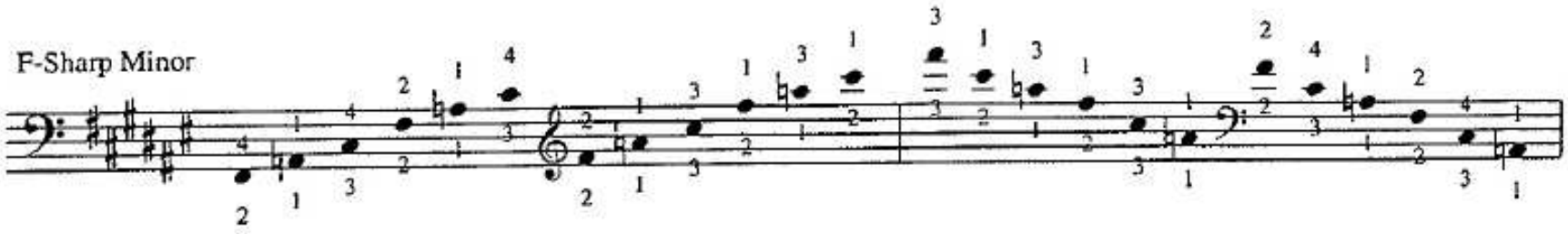
Diminished Seventh of F-Sharp

Dominant Seventh of F-Sharp



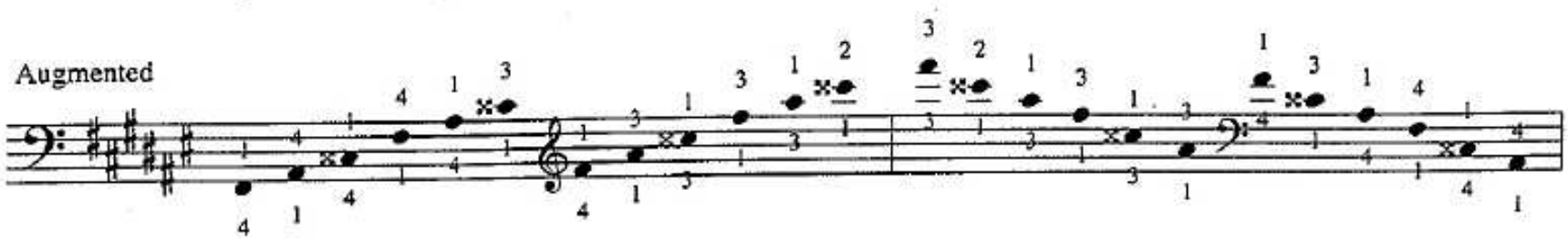
Key of F-Sharp

F-Sharp Minor



F-Sharp Major

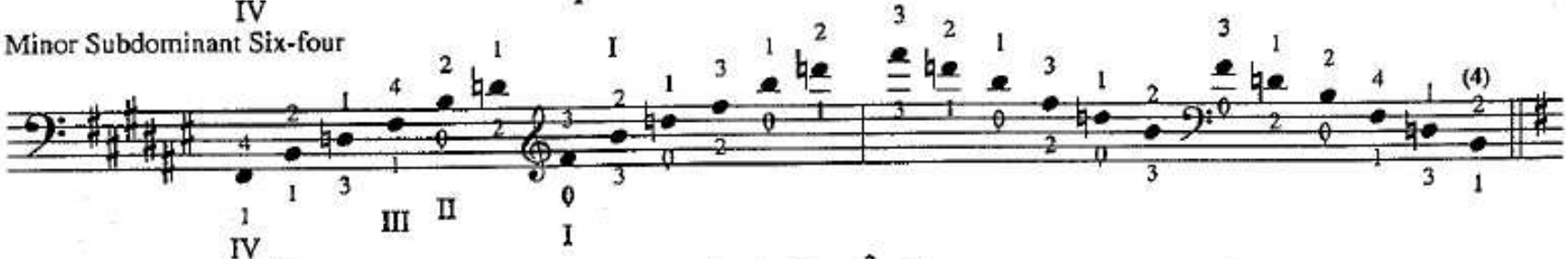
Augmented



Relative Minor Six

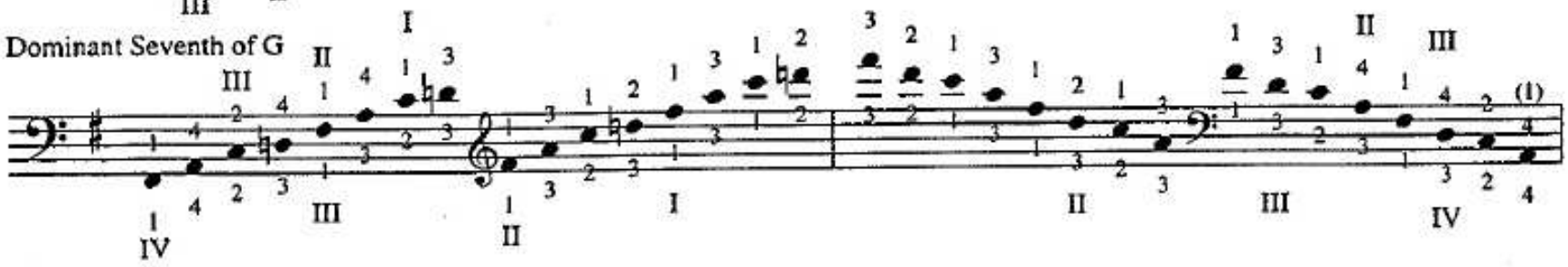
Subdominant Six-four

Minor Subdominant Six-four



Diminished Seventh of G

Dominant Seventh of G



Key of G

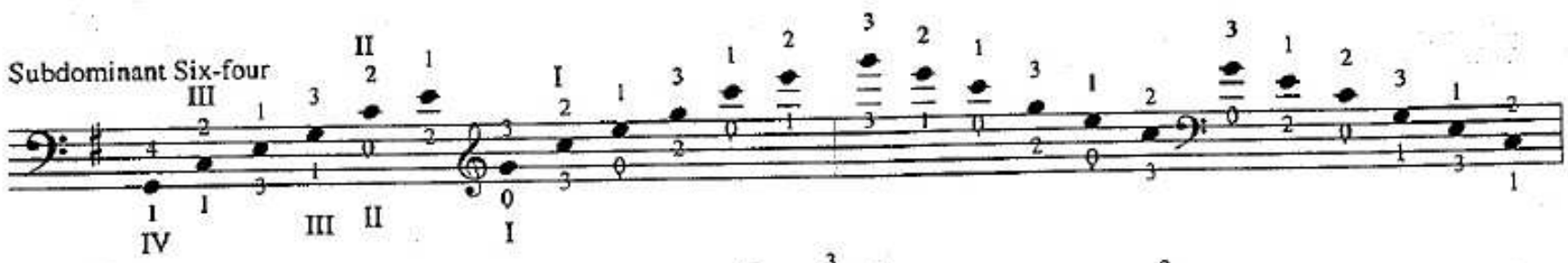
G Minor

G Major

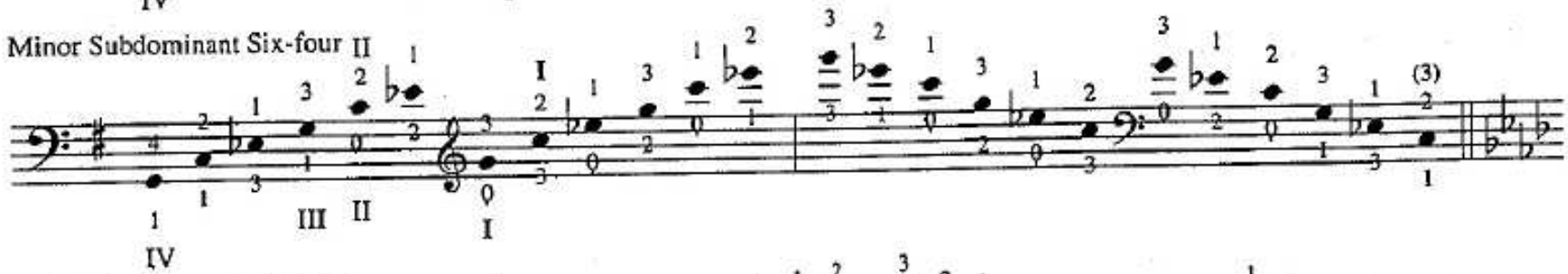
Augmented

Relative Minor Six

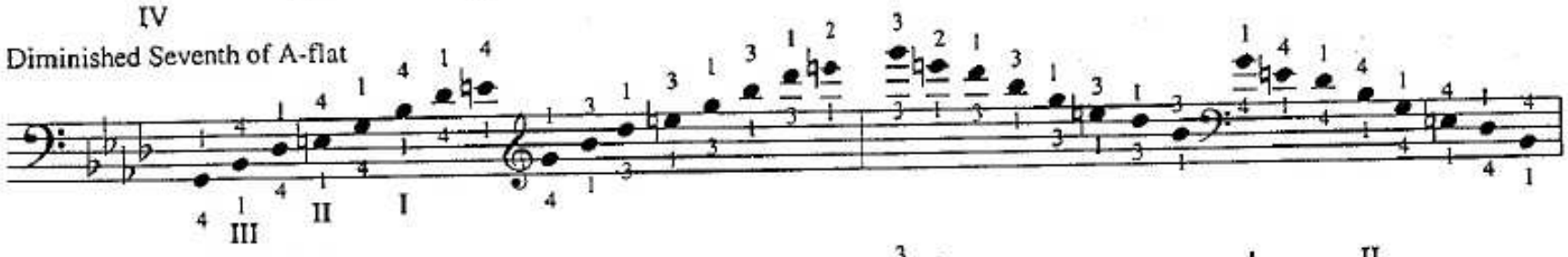
Subdominant Six-four



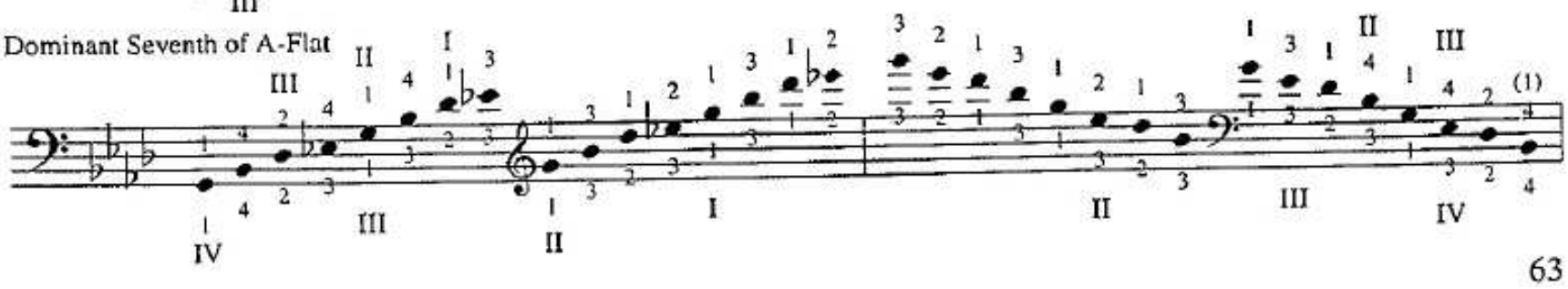
Minor Subdominant Six-four



Diminished Seventh of A-flat



Dominant Seventh of A-Flat



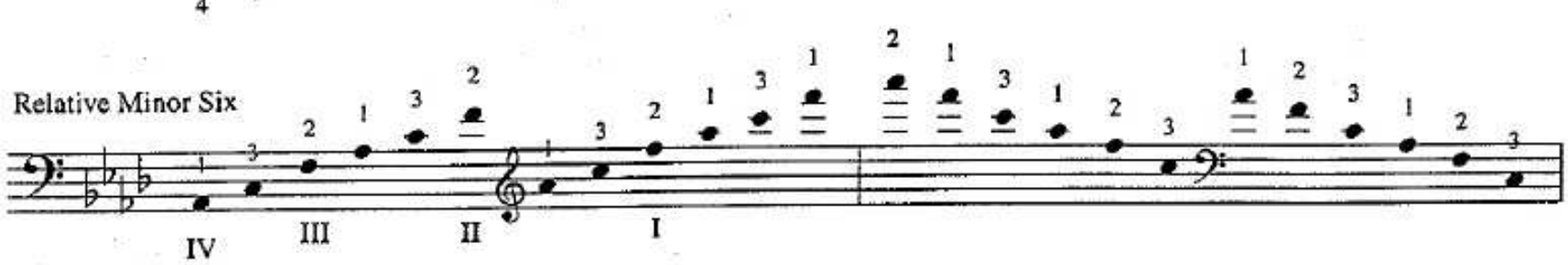
Key of A-Flat

A-Flat Minor

A-Flat Major

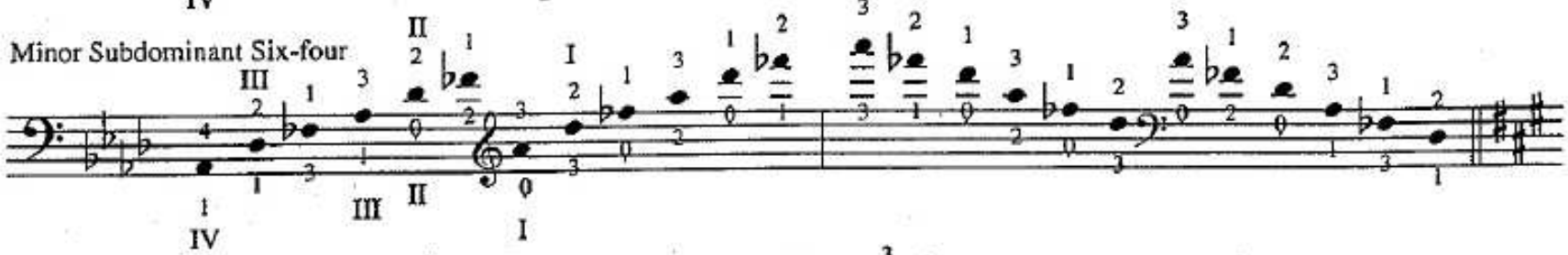
Augmented

Relative Minor Six



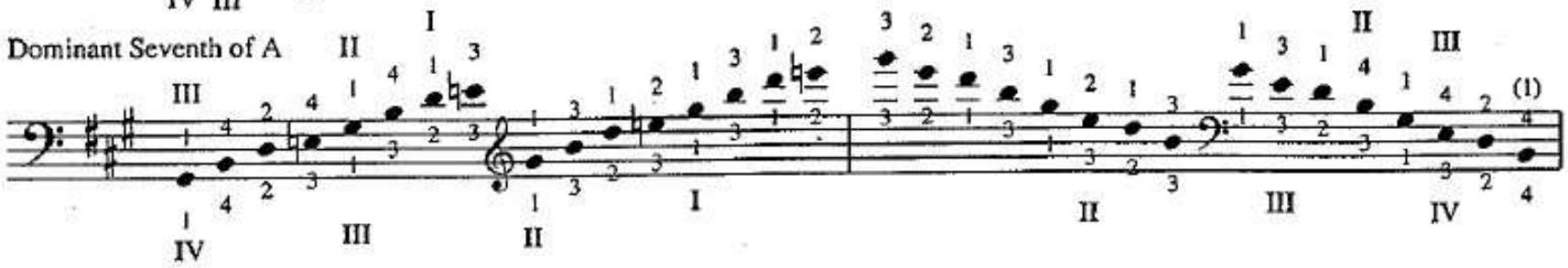
Subdominant Six-four

Minor Subdominant Six-four



Diminished Seventh of A

Dominant Seventh of A



Key of A

A Minor

A Major

Augmented

Relative Minor Six

Subdominant Six-four

Minor Subdominant Six-four

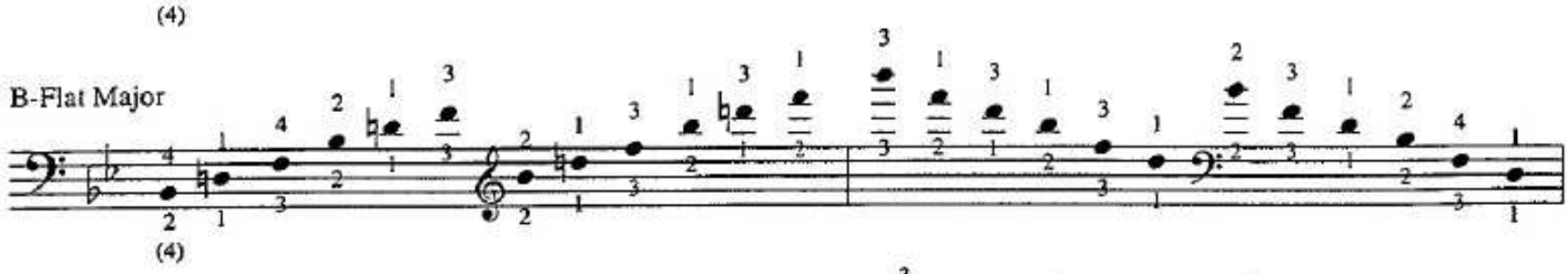
Diminished Seventh of B-Flat

Dominant Seventh of B-Flat

Key of B-Flat

B-Flat Minor

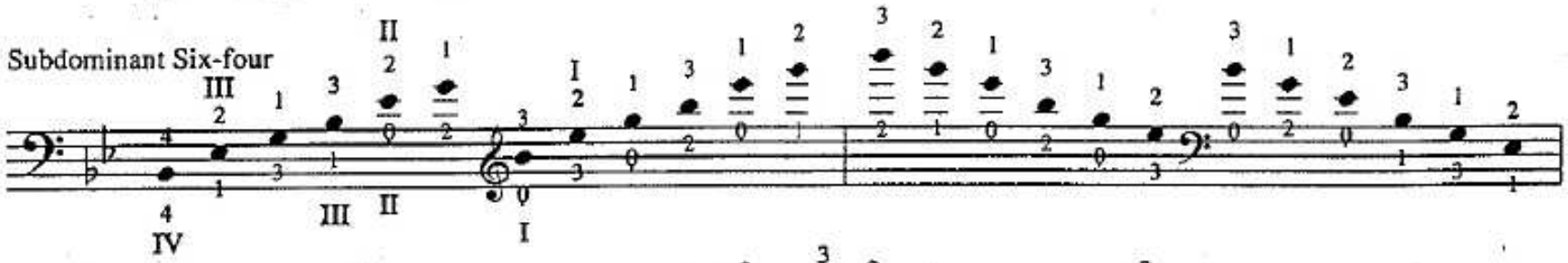
B-Flat Major



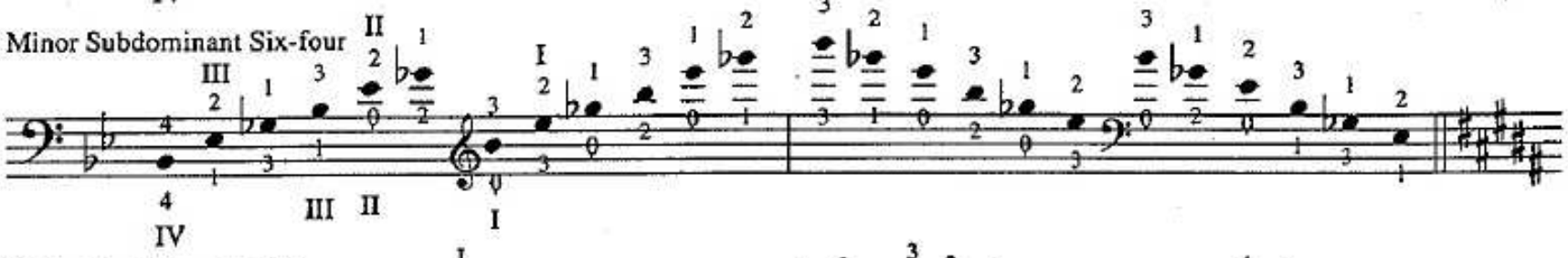
Augmented

Relative Minor Six

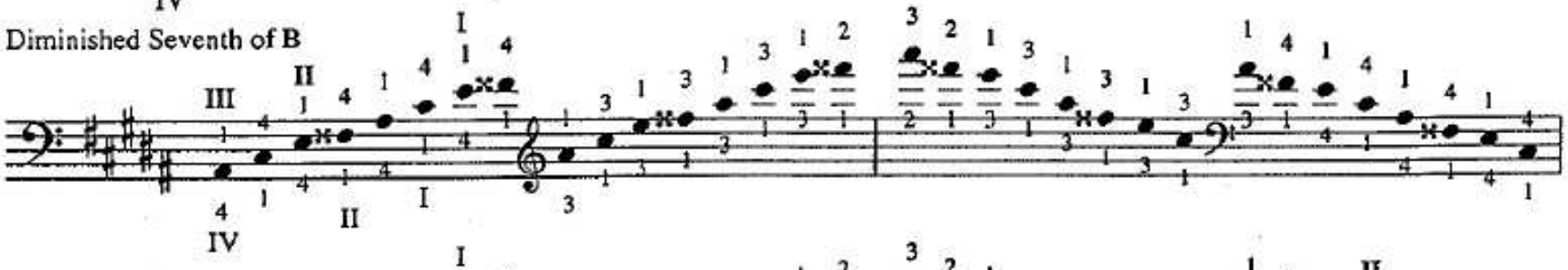
Subdominant Six-four



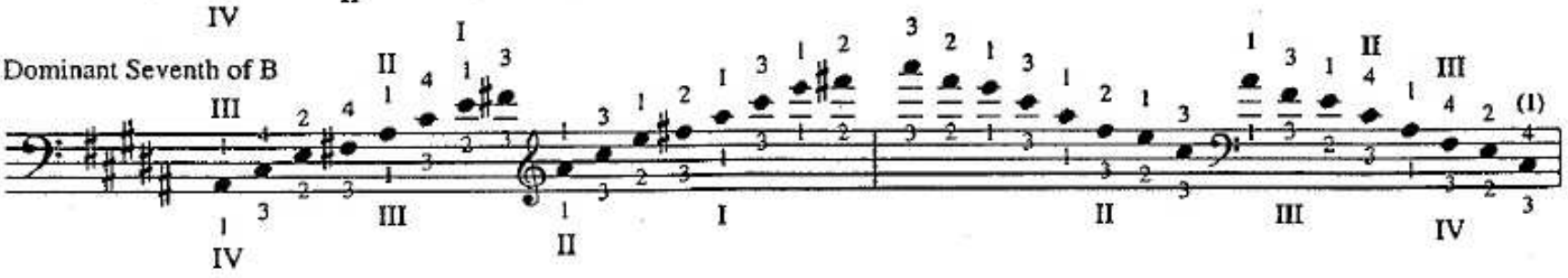
Minor Subdominant Six-four



Diminished Seventh of B



Dominant Seventh of B



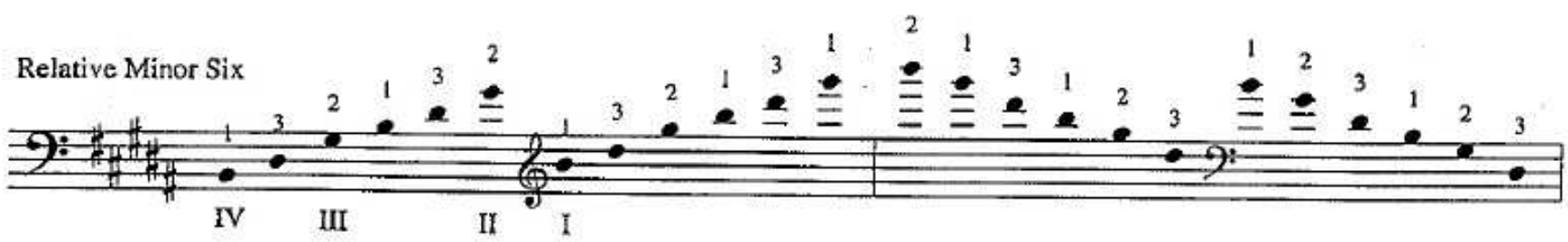
Key of B

B Minor

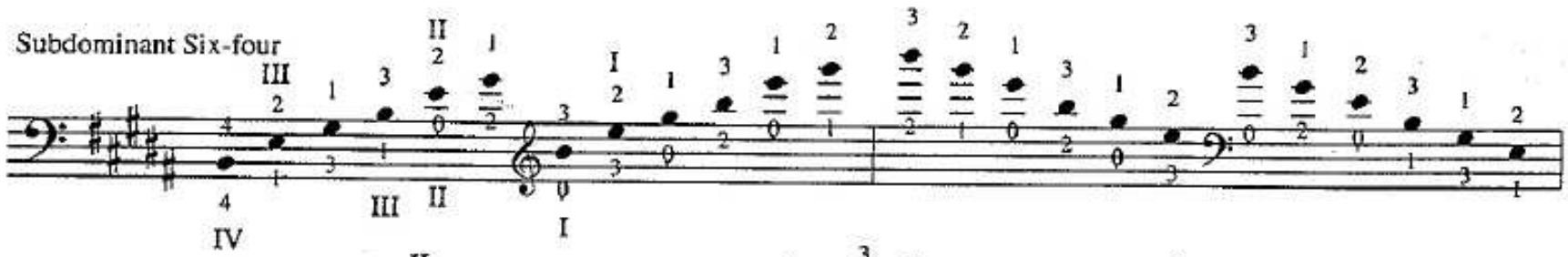
B Major

Augmented

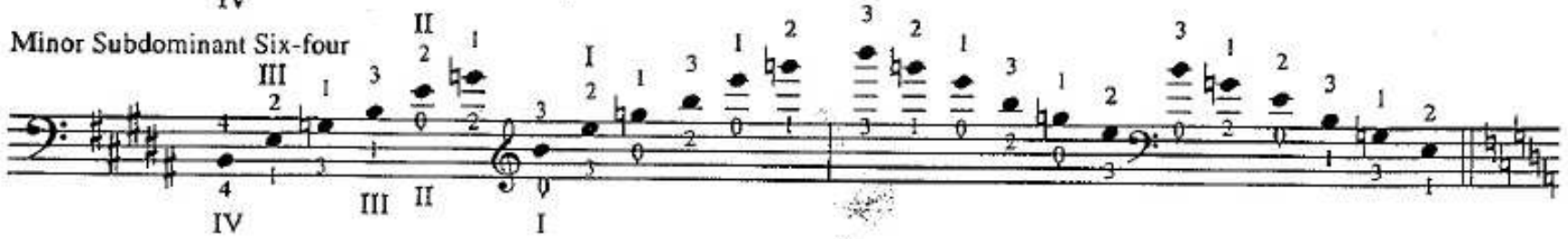
Relative Minor Six



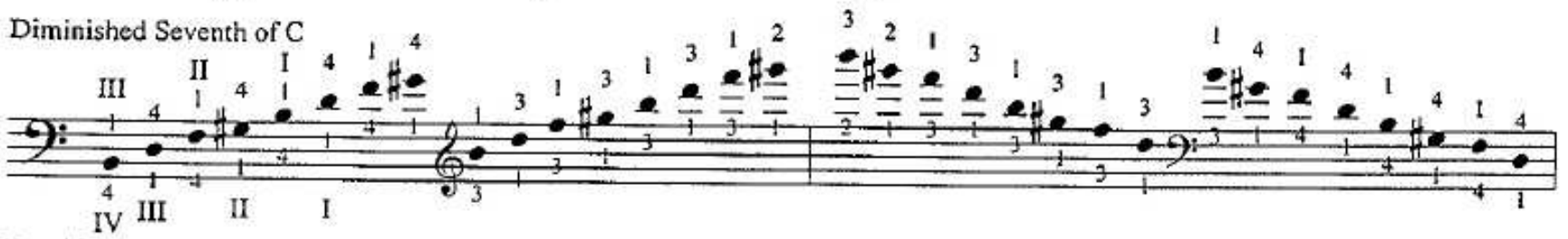
Subdominant Six-four



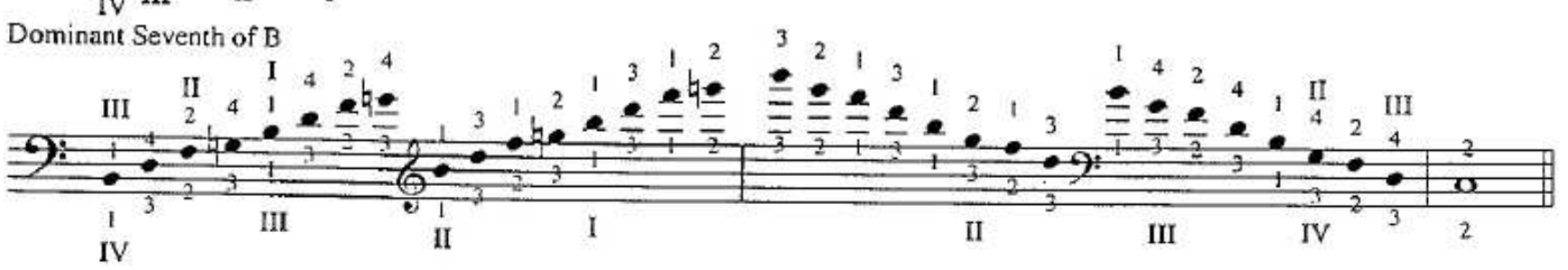
Minor Subdominant Six-four



Diminished Seventh of C



Dominant Seventh of B

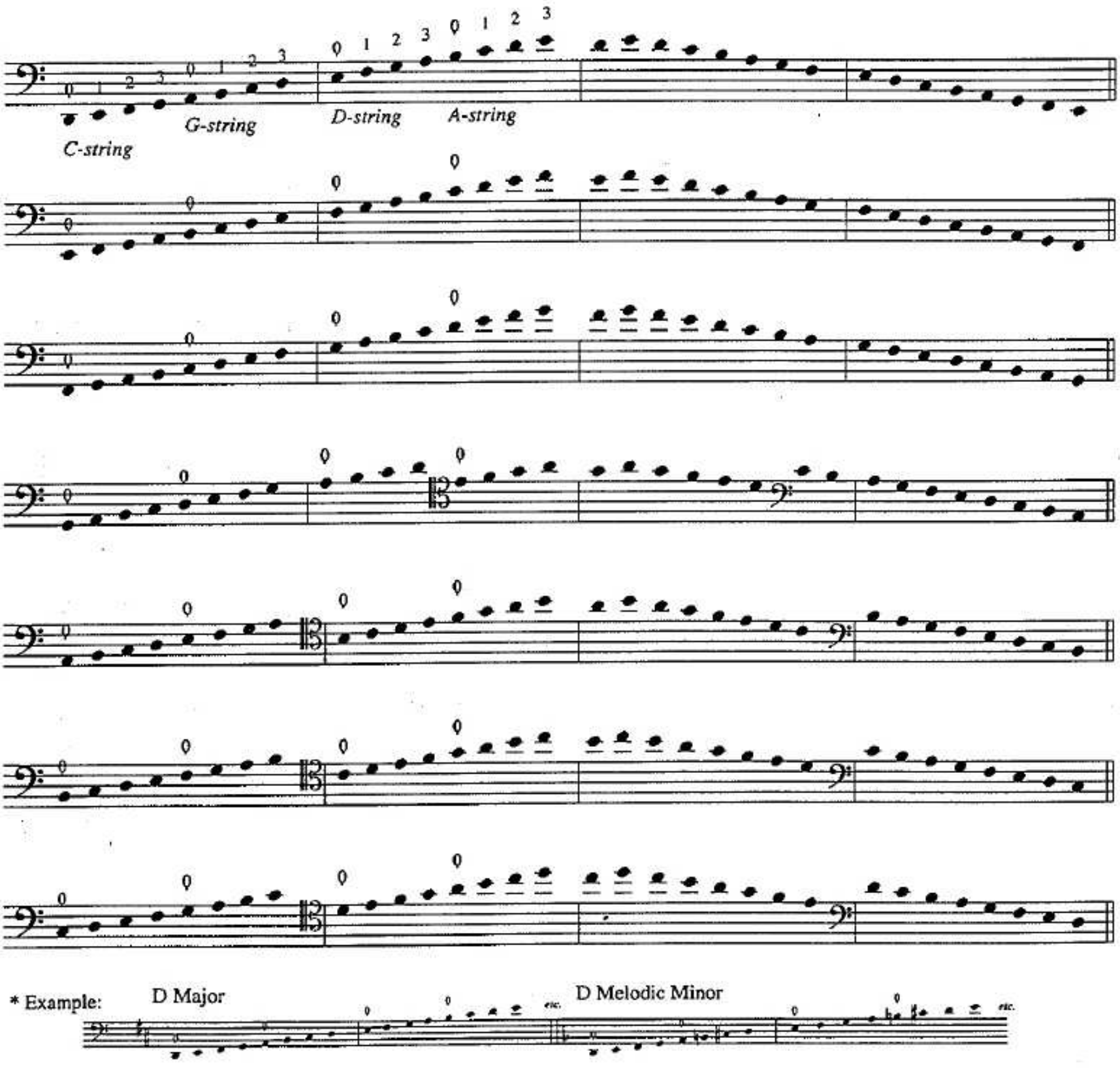


10
Scales in One Position

Groups of eight notes. PATTERNS: ***B1, B2, B4, B8, B16***
R1, R2, R4, R8, R16

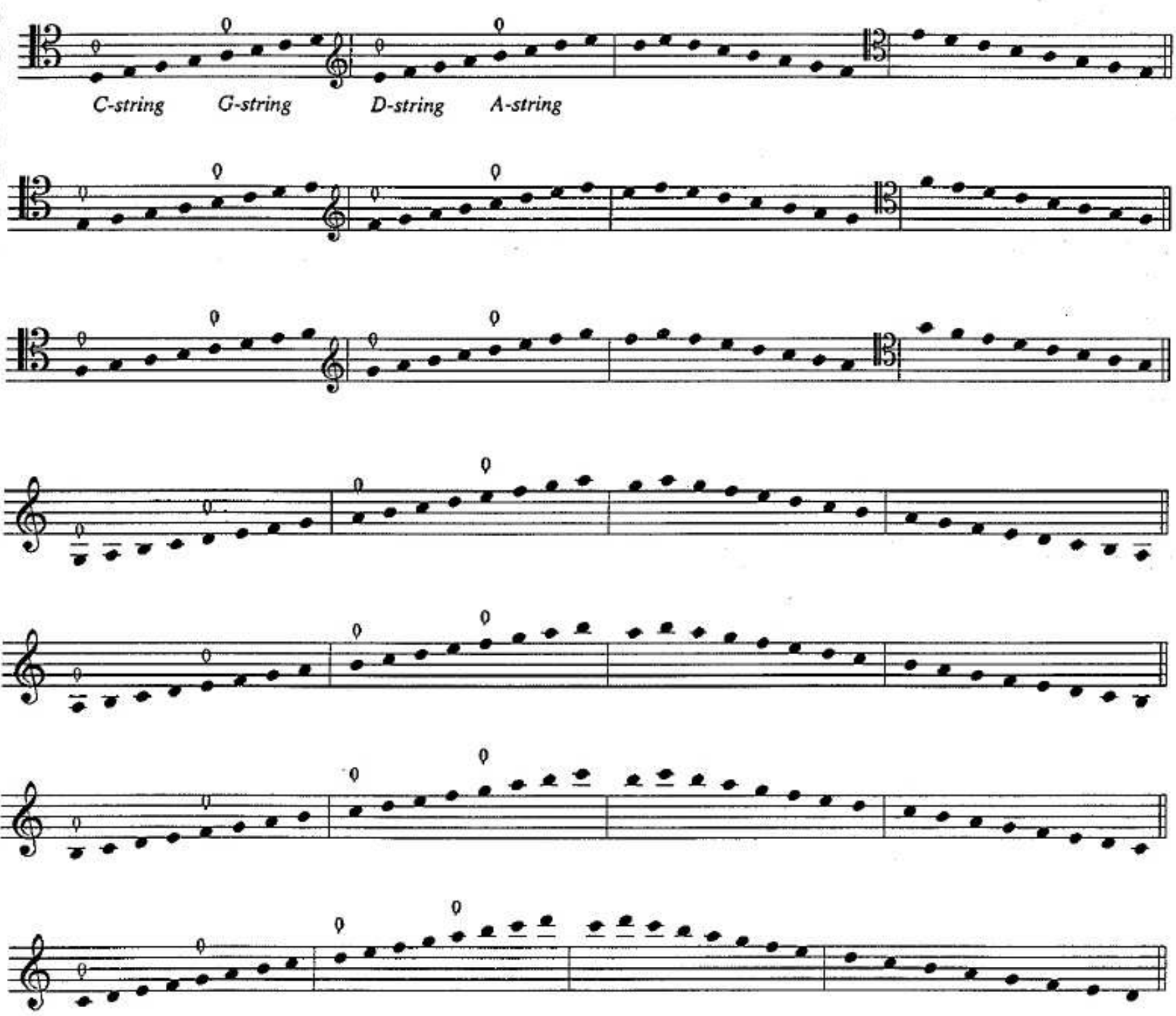
Primary Patterns:

*Practice each line on page 68 and 69 as a major and minor scale using the first note as the tonic.**
*In addition, practice each line in all other keys.***

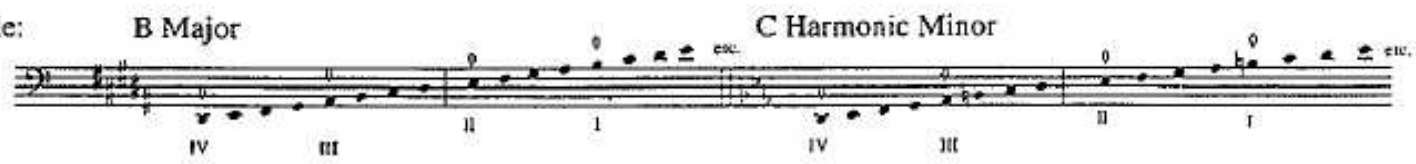


* Example: D Major D Melodic Minor

The higher positions.



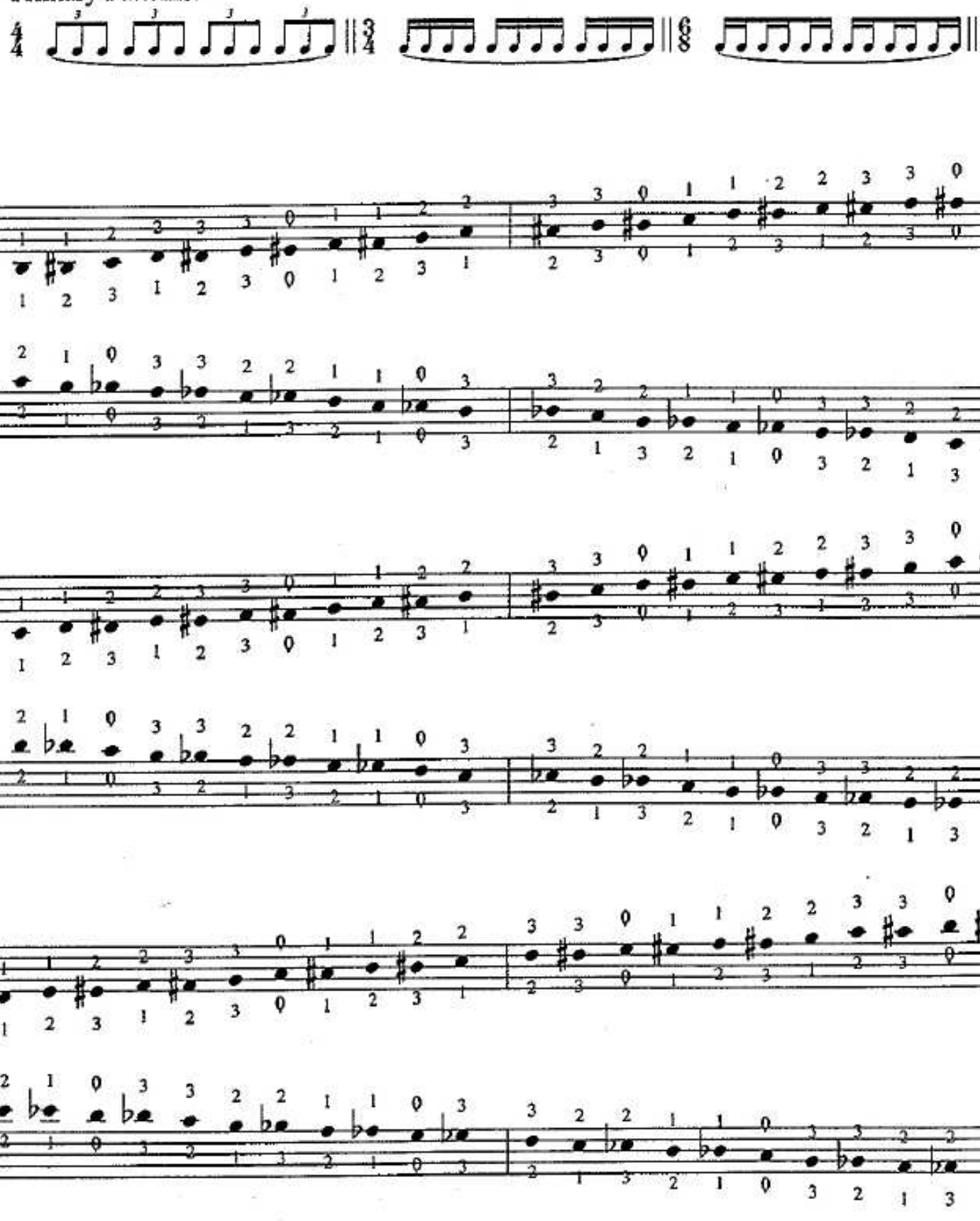
** Example:

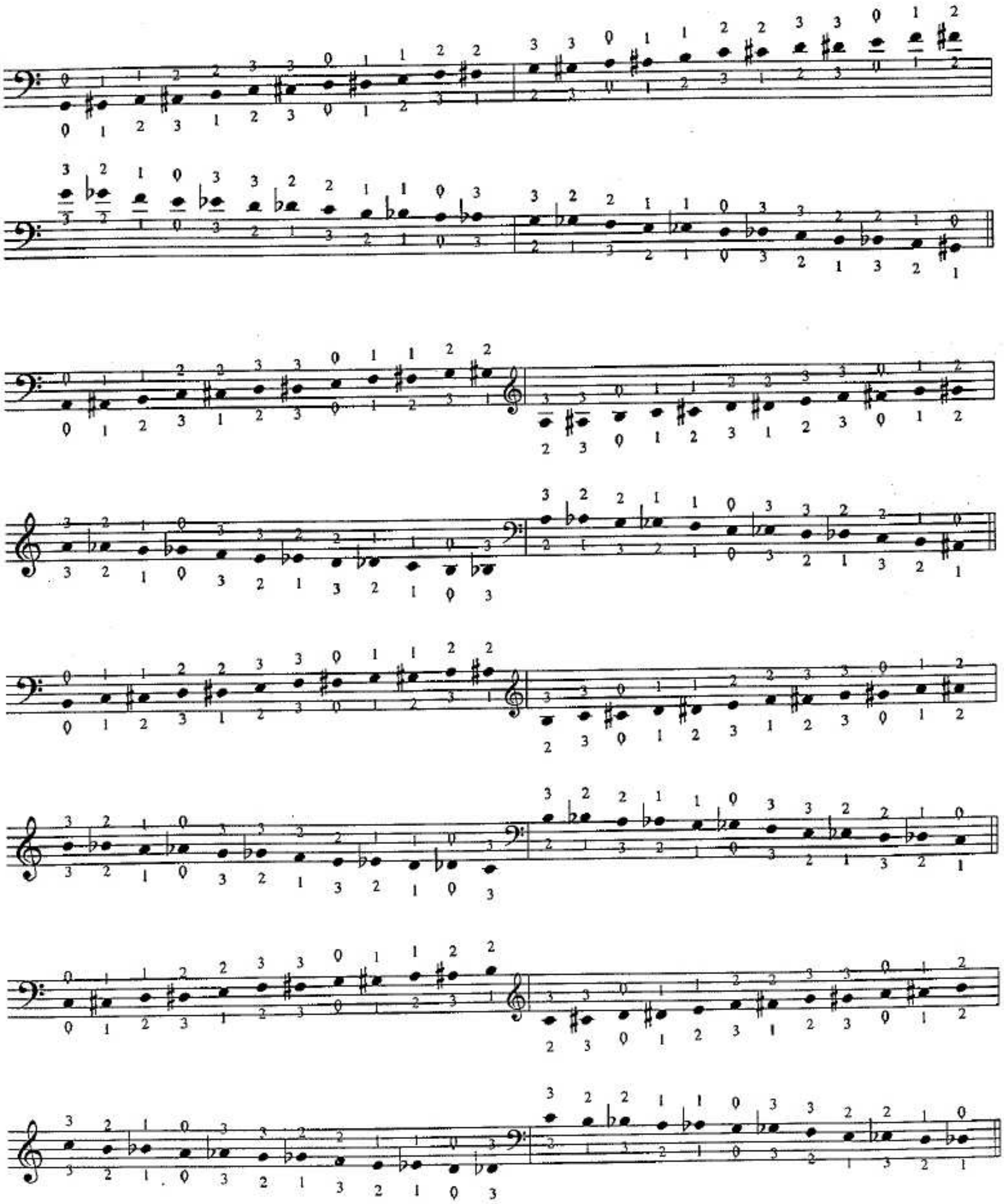


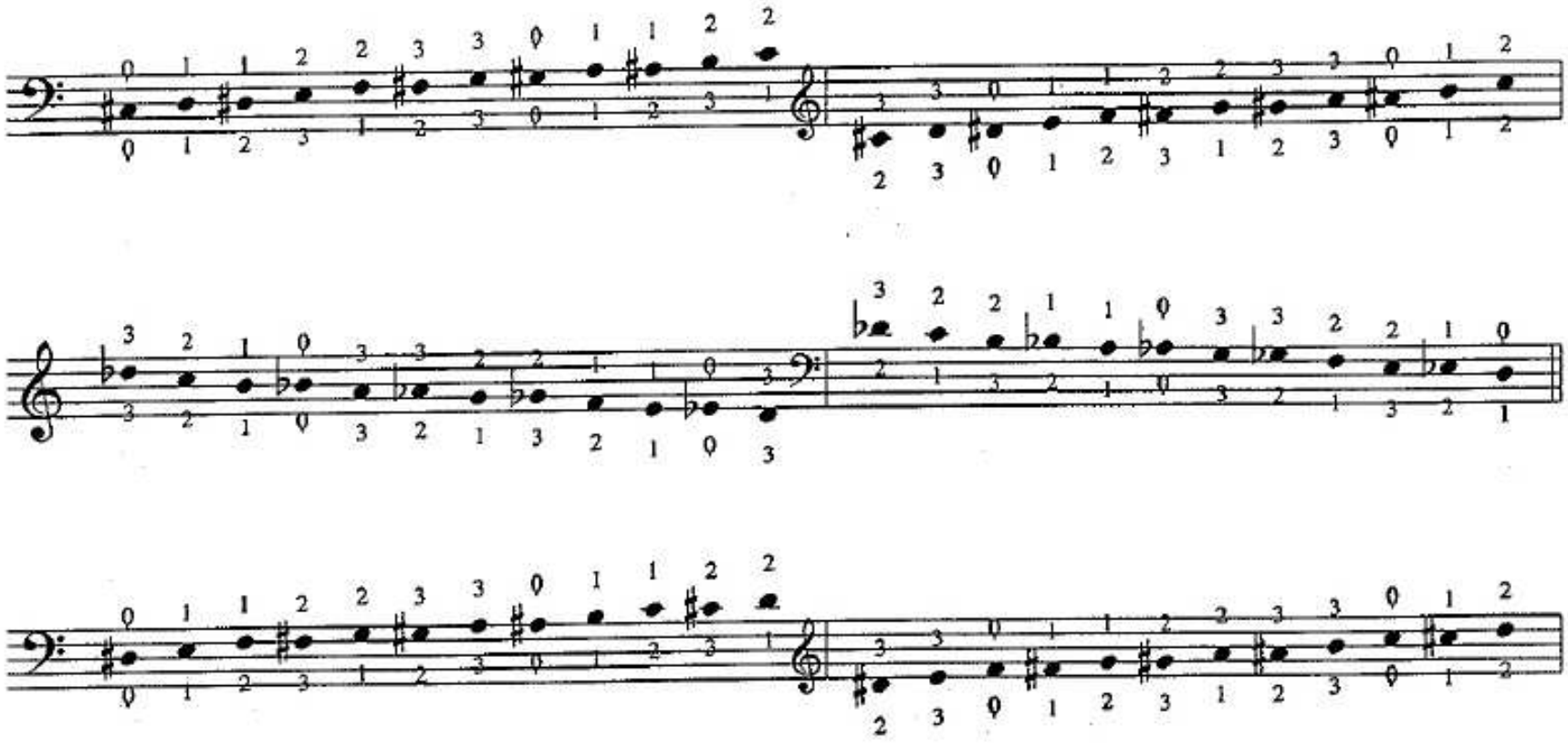
11
The Chromatic Scale In One Position

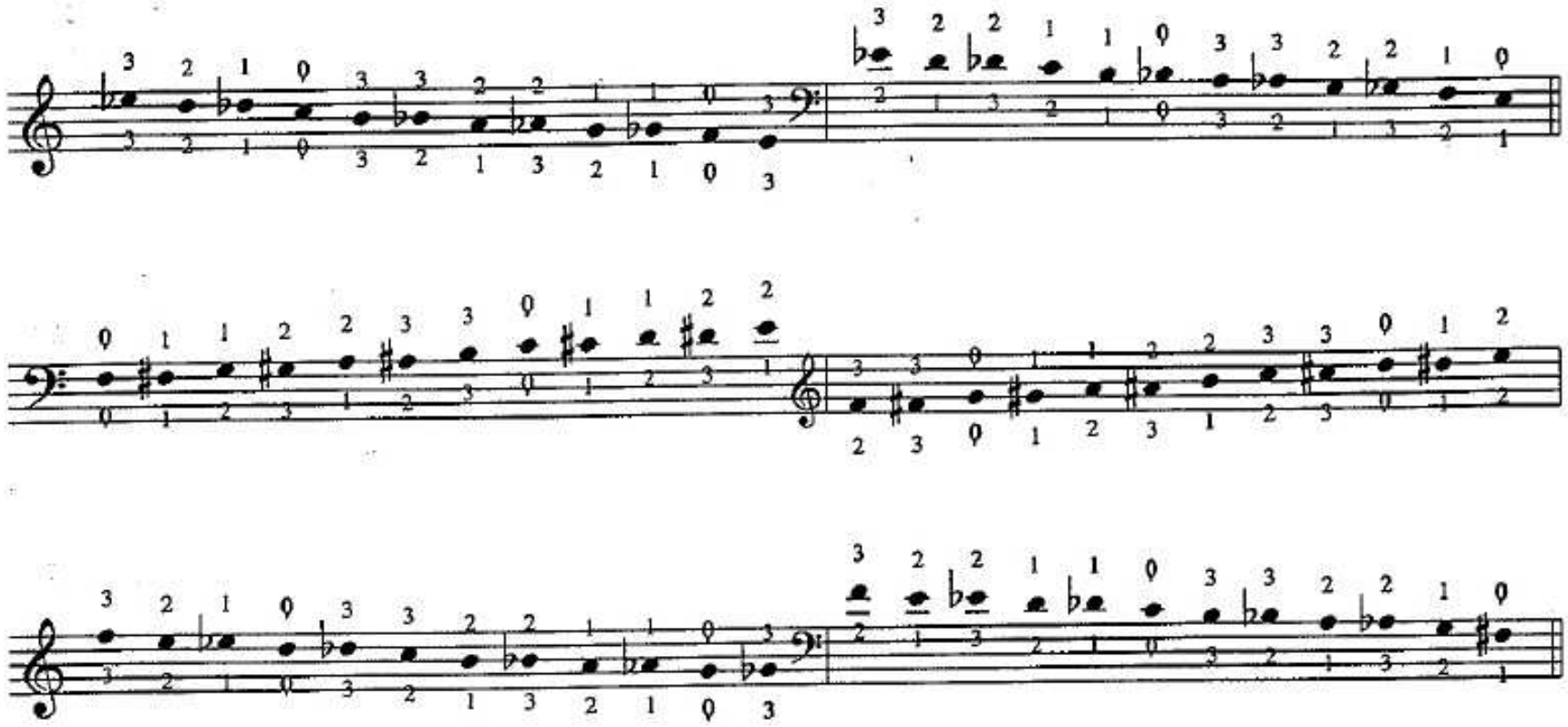
Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

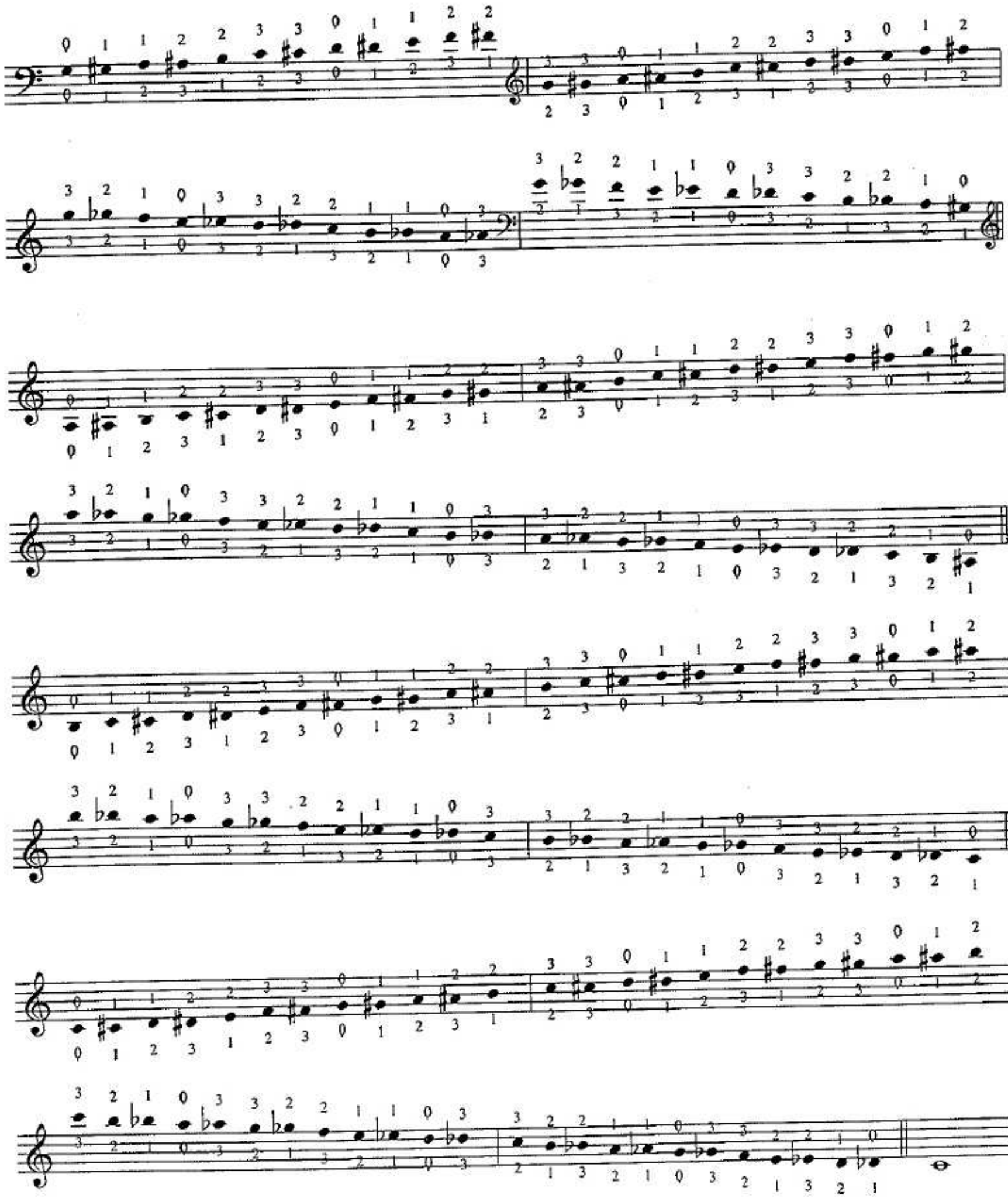
Primary Patterns:









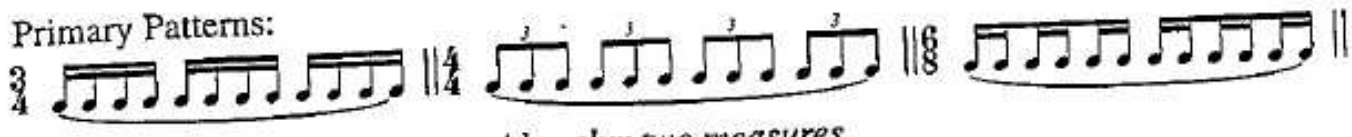


12
Broken Thirds and Fourths in One Position

Broken Thirds in One Position

Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

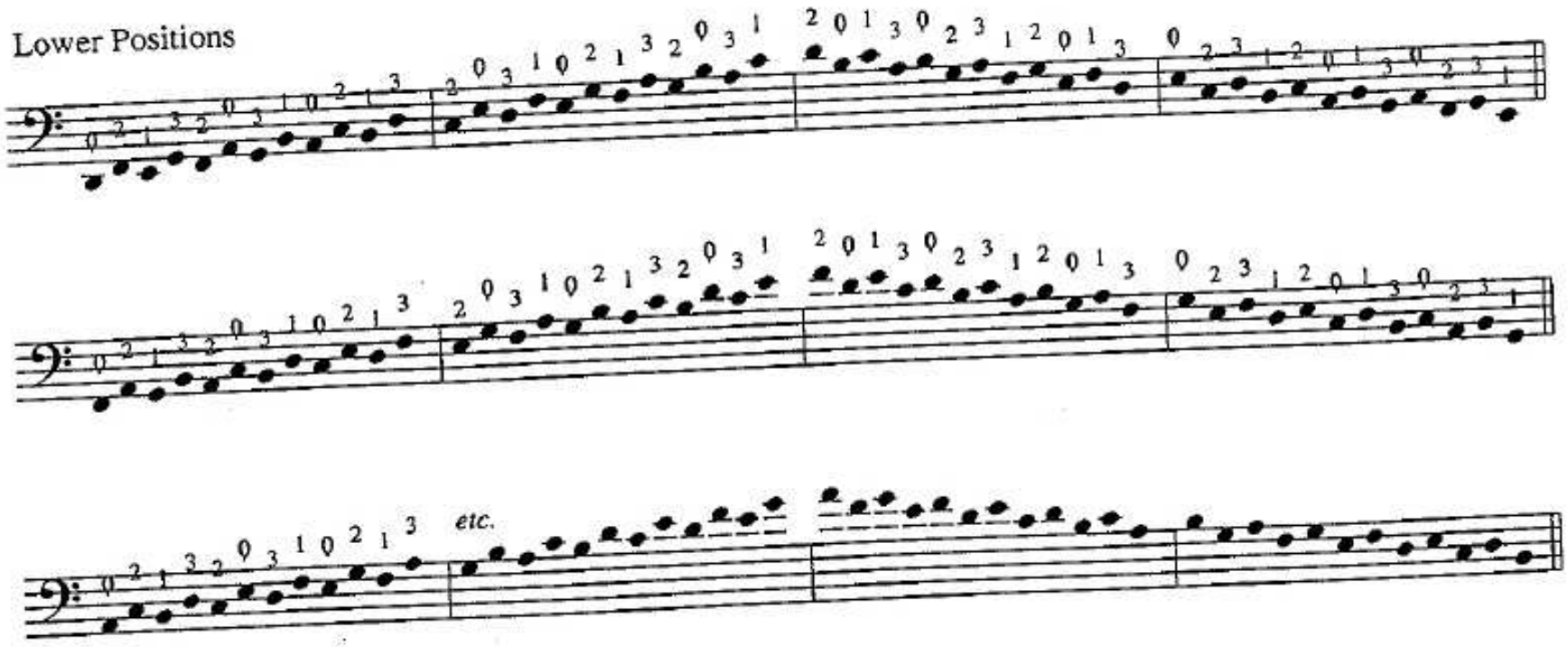
Primary Patterns:



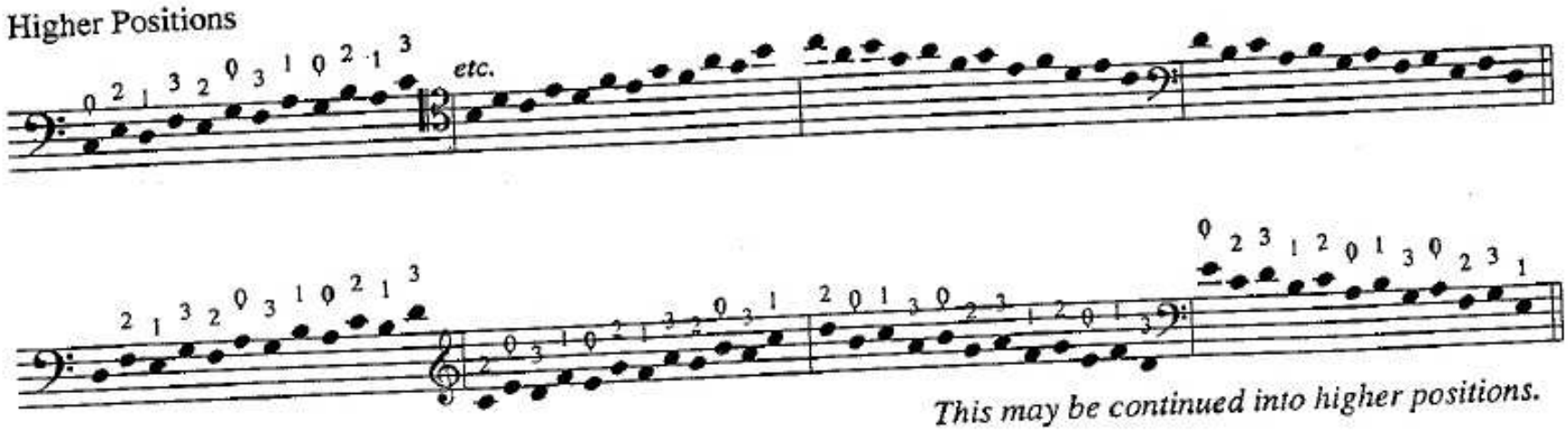
Also slur two measures.

All exercises in this chapter should be practiced in all the keys. Start with D Major in the first exercise, F Major in the second and A Major in the third etc. using the first note as the tonic. Begin all exercises on the C-string.

Lower Positions



Higher Positions

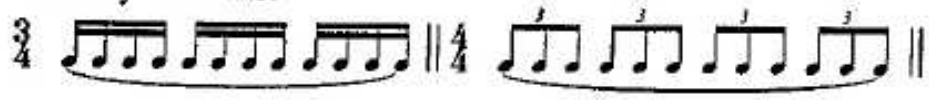


This may be continued into higher positions.

Broken Fourths in One Position

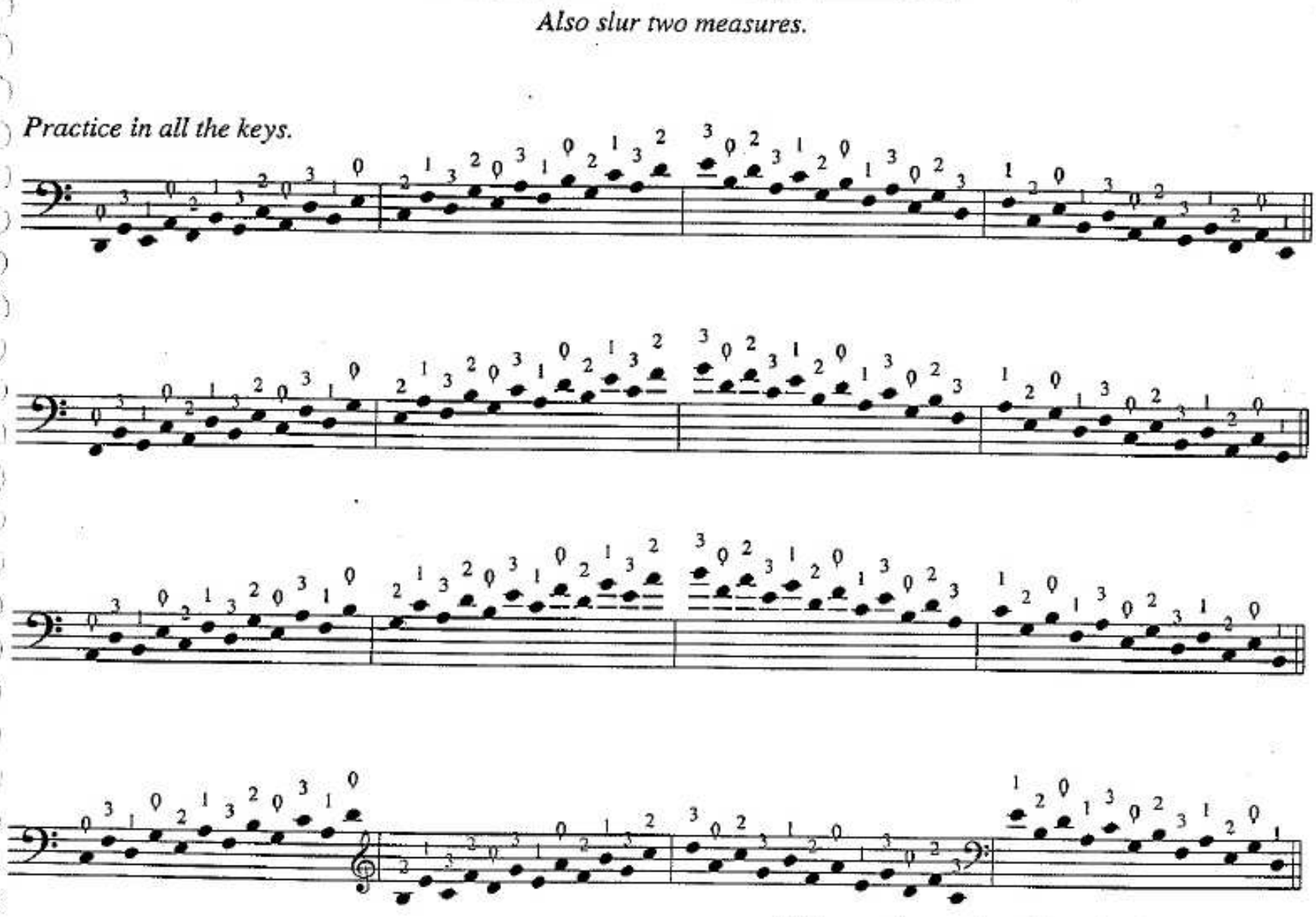
Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

Primary Patterns:



Also slur two measures.

Practice in all the keys.



This may be continued into higher positions.

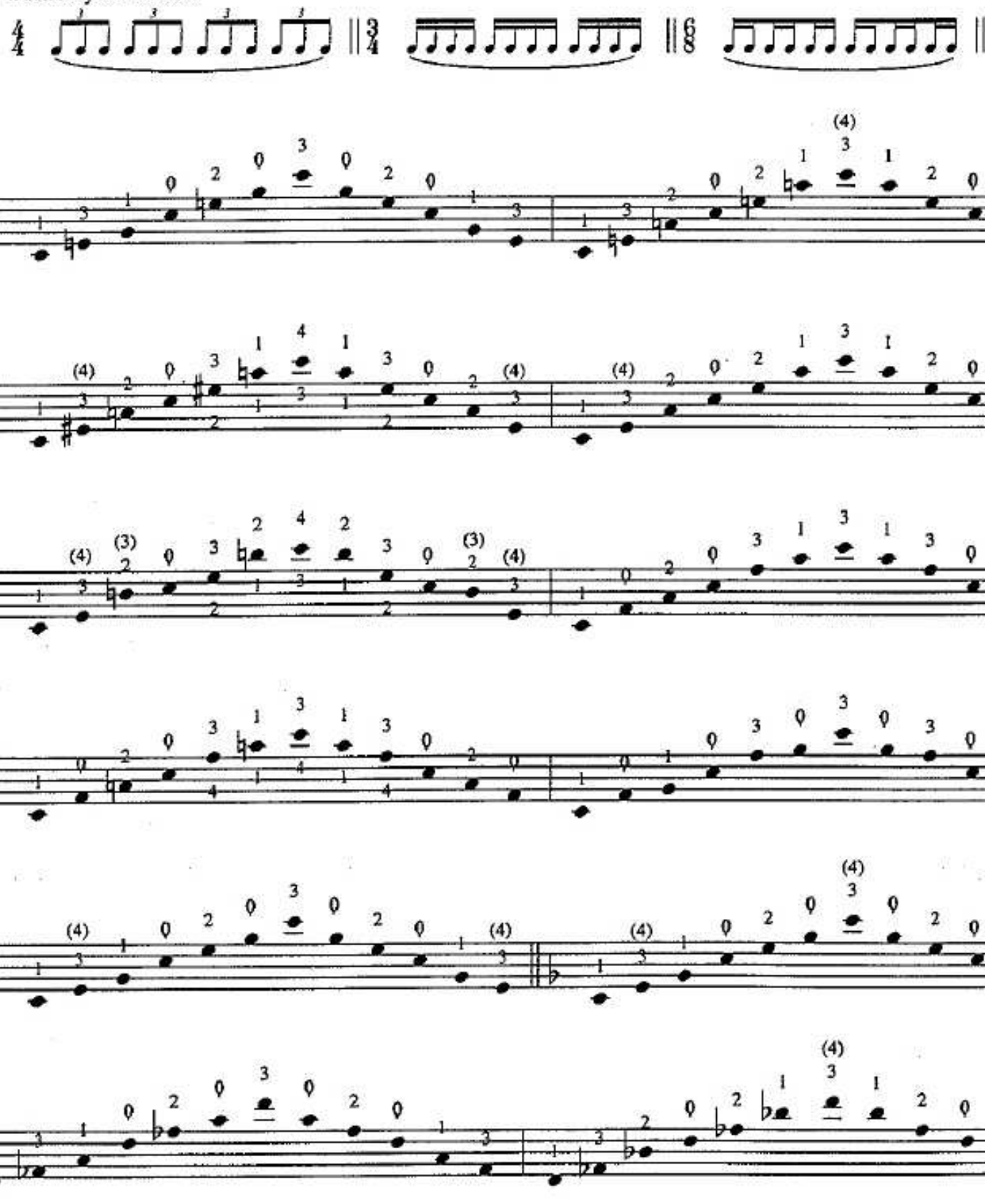
13

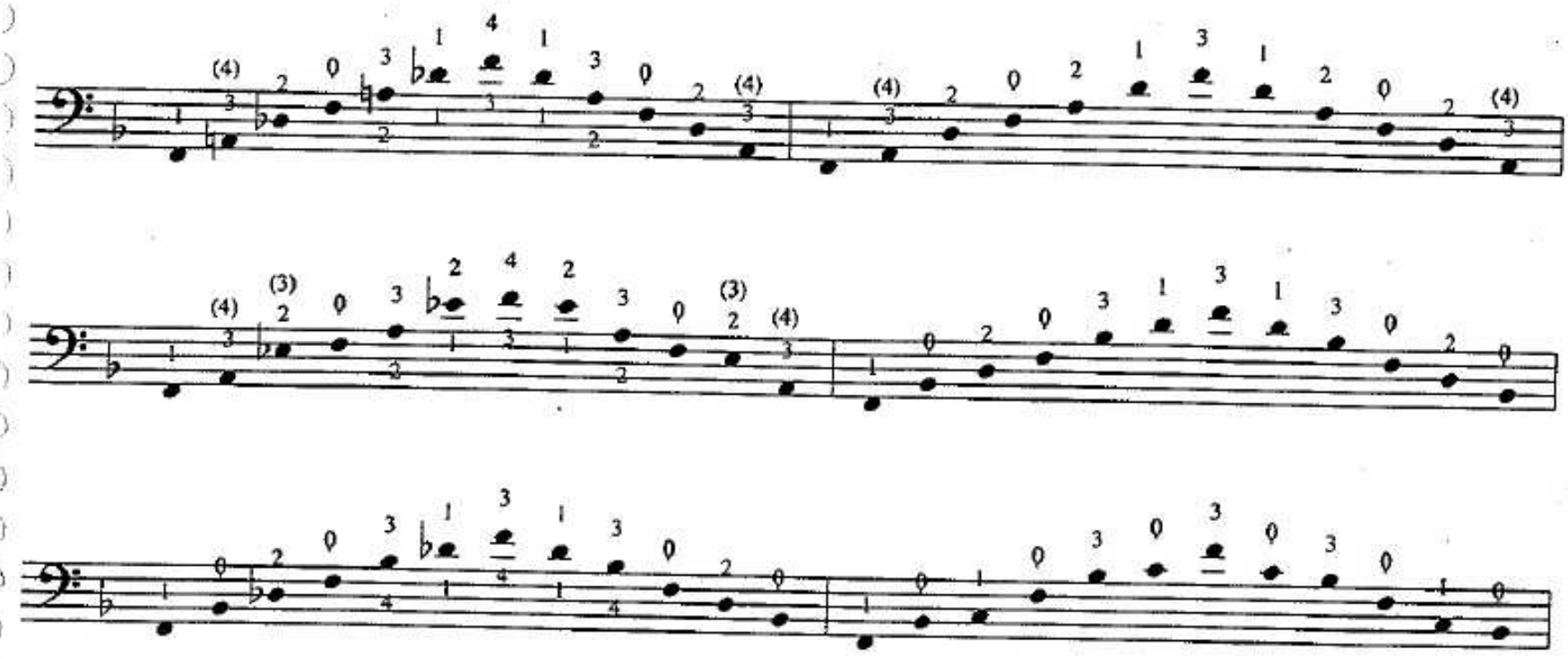
Arpeggios in One Position

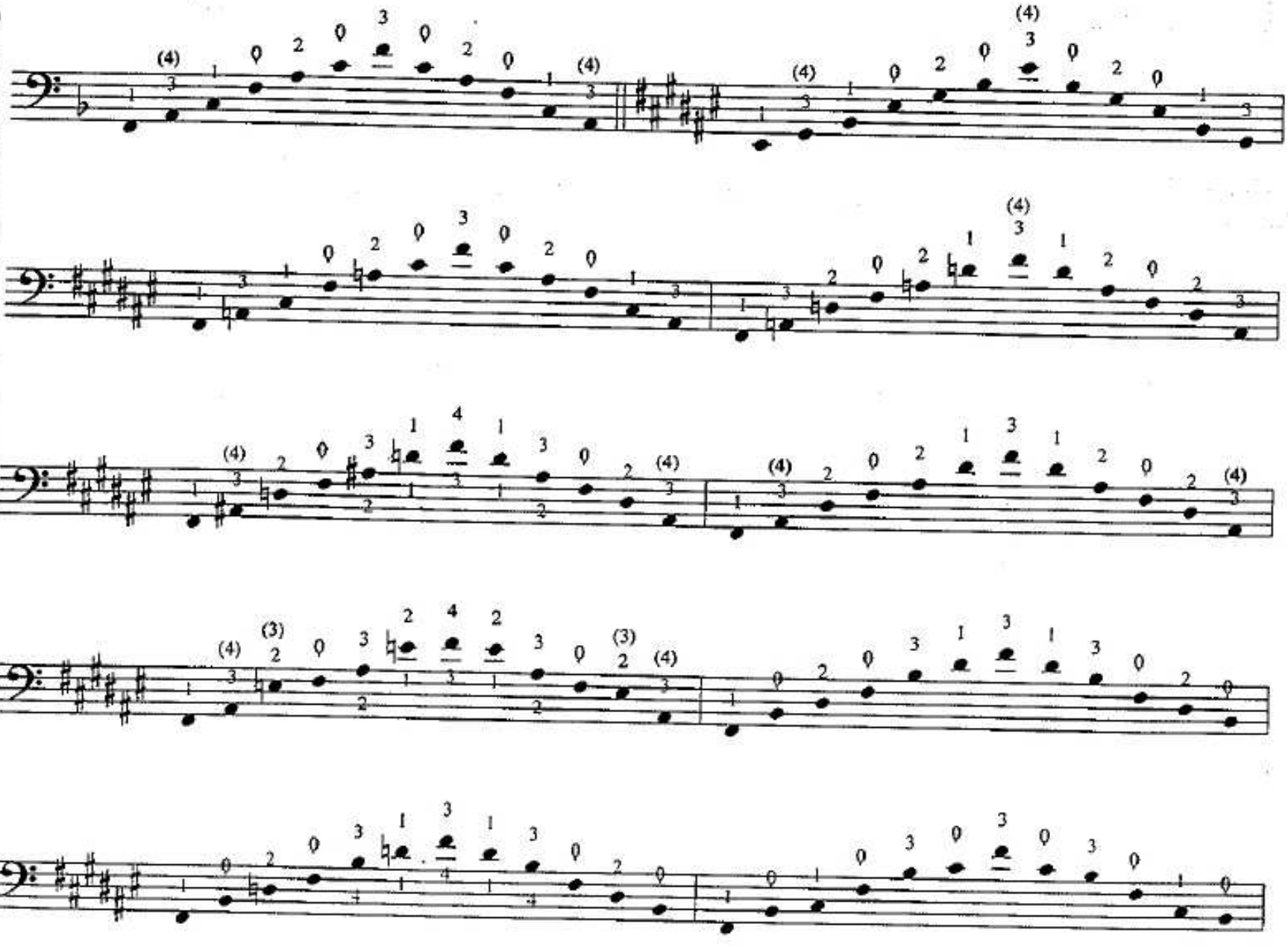
(Using the Thumb in the Lower Registers)

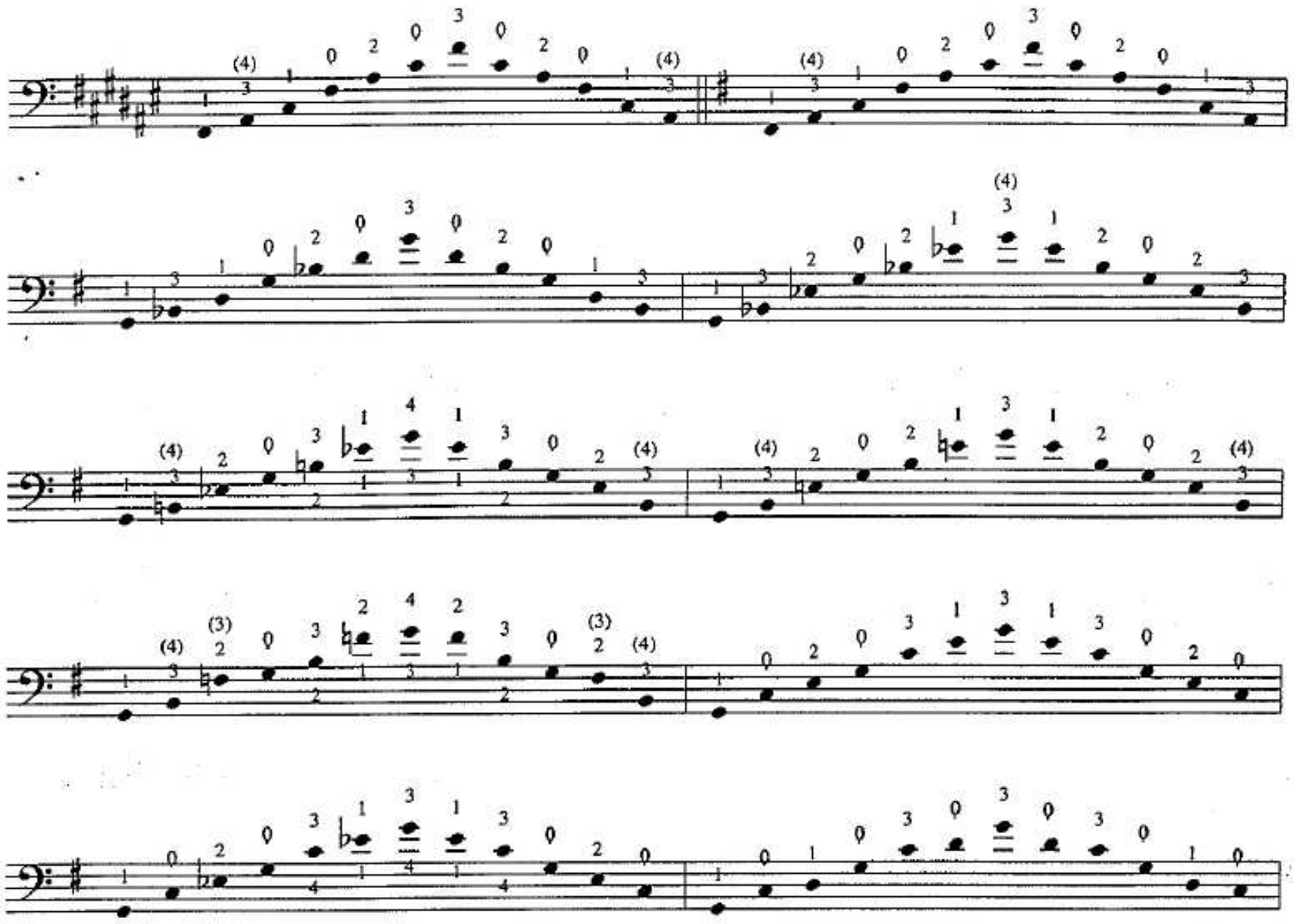
Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

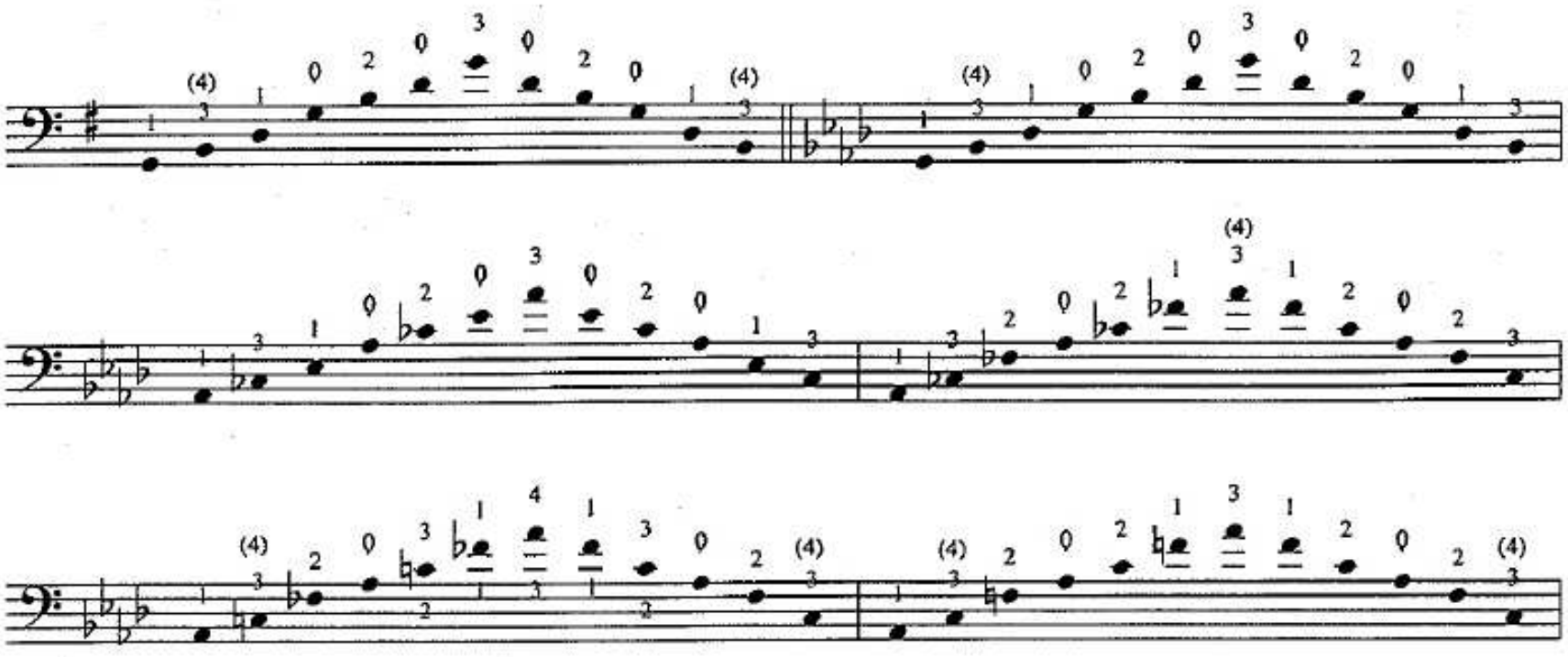
Primary Patterns:

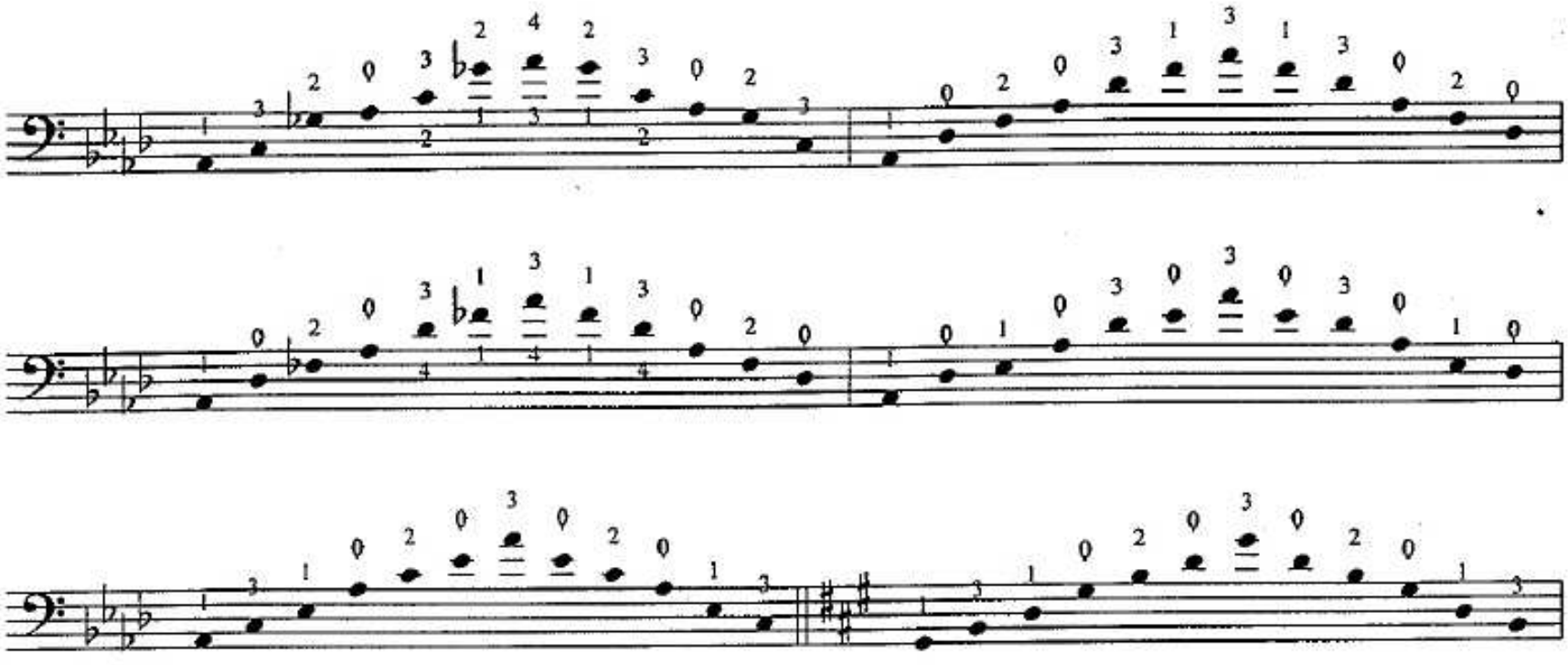




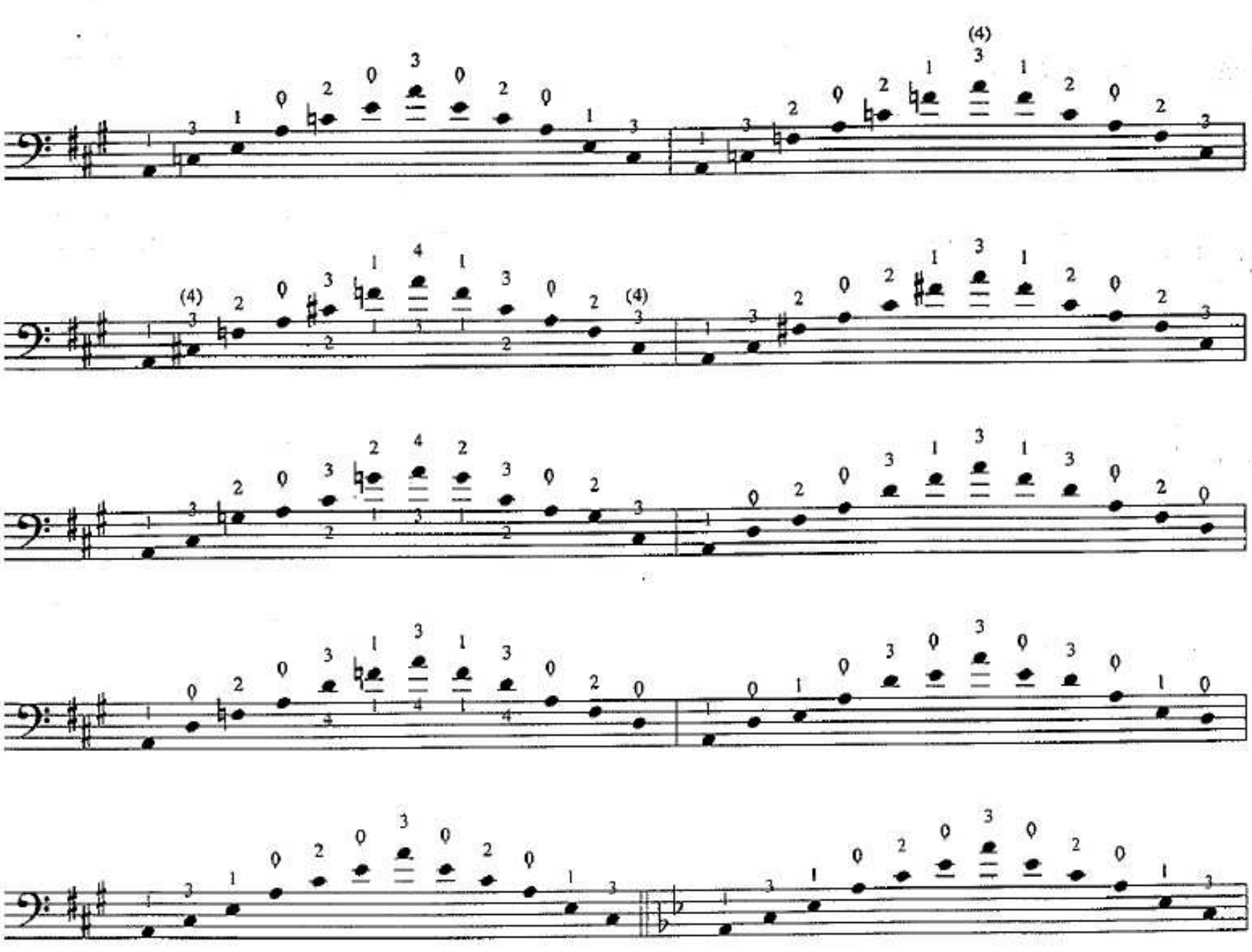


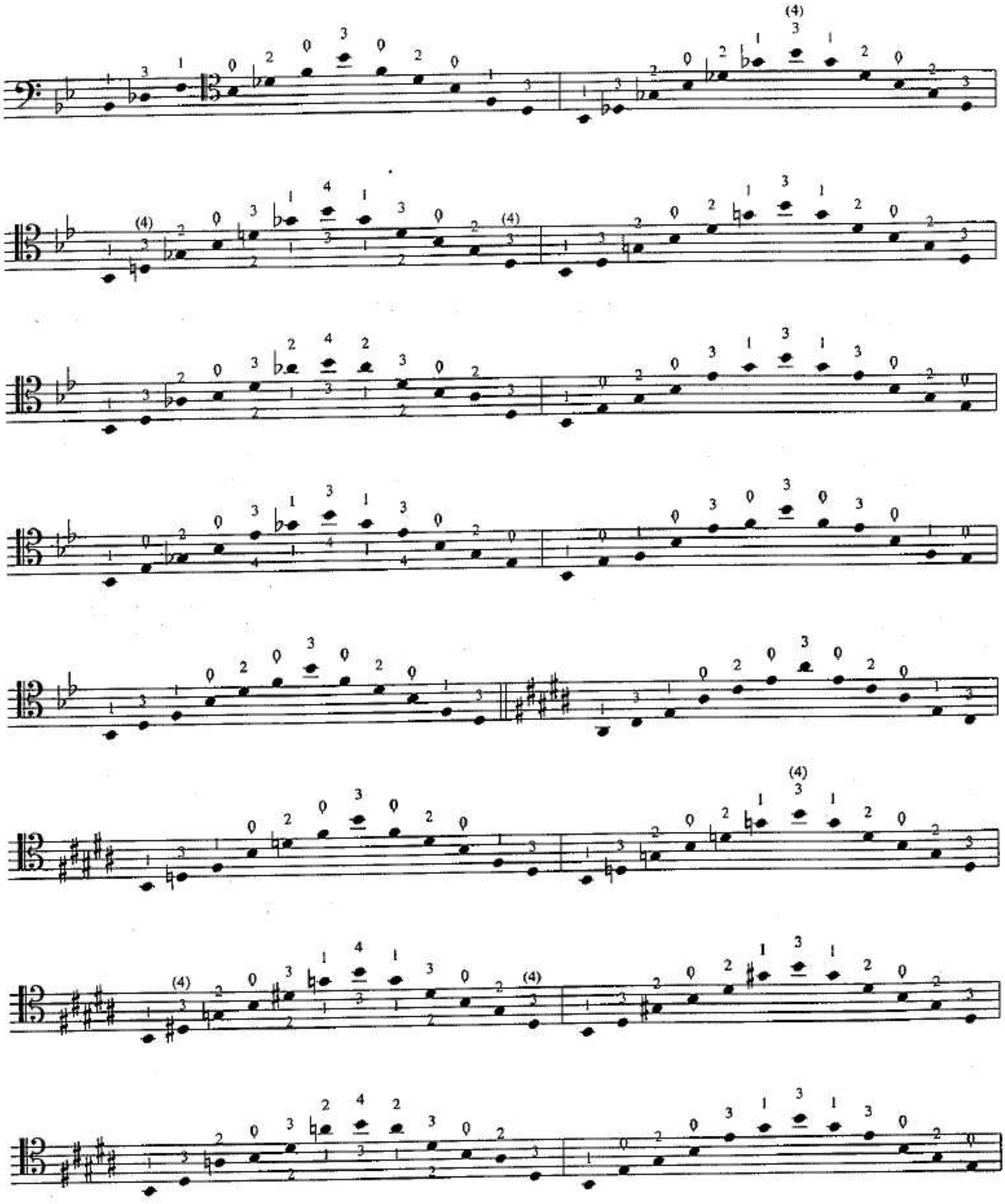


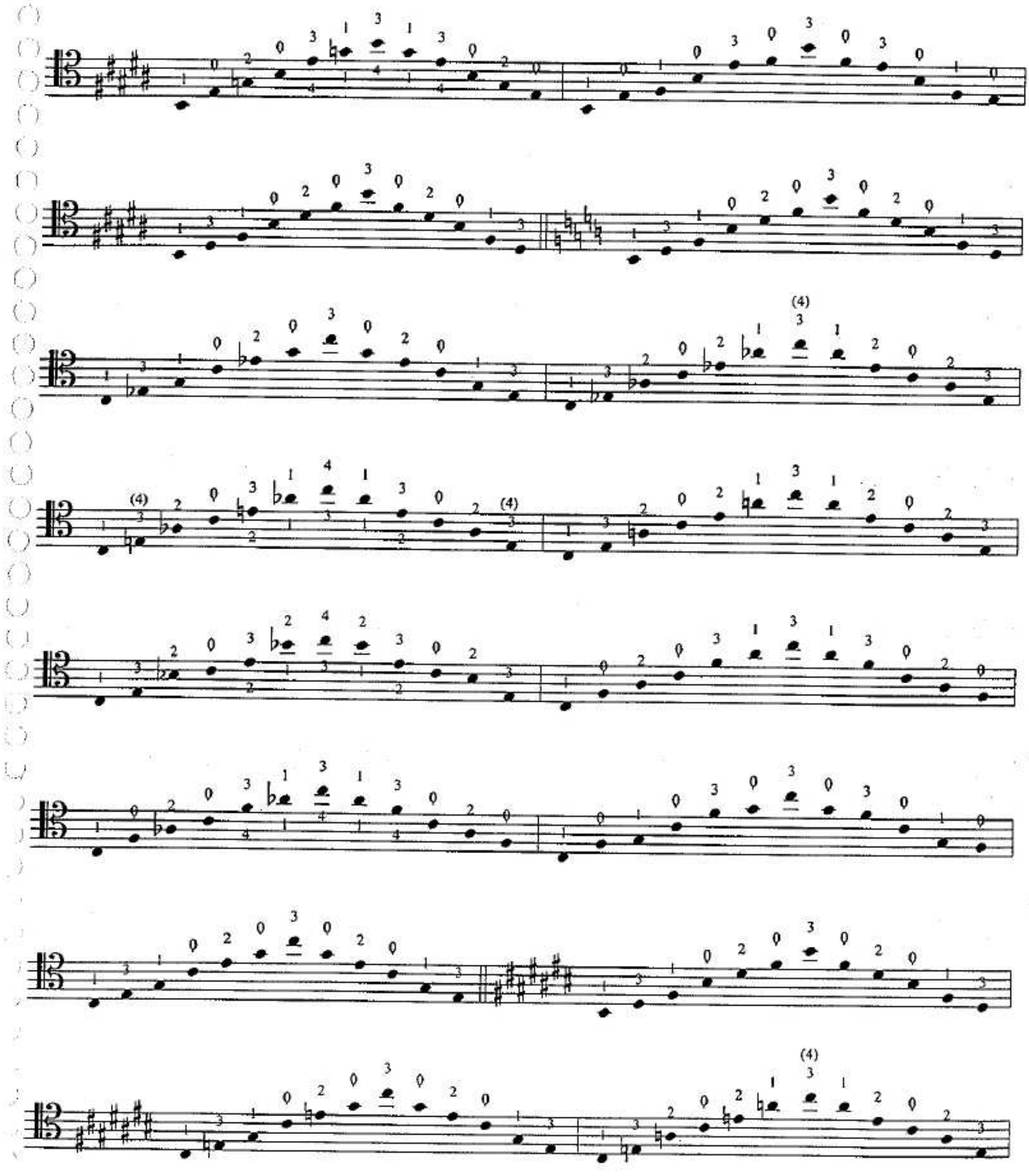


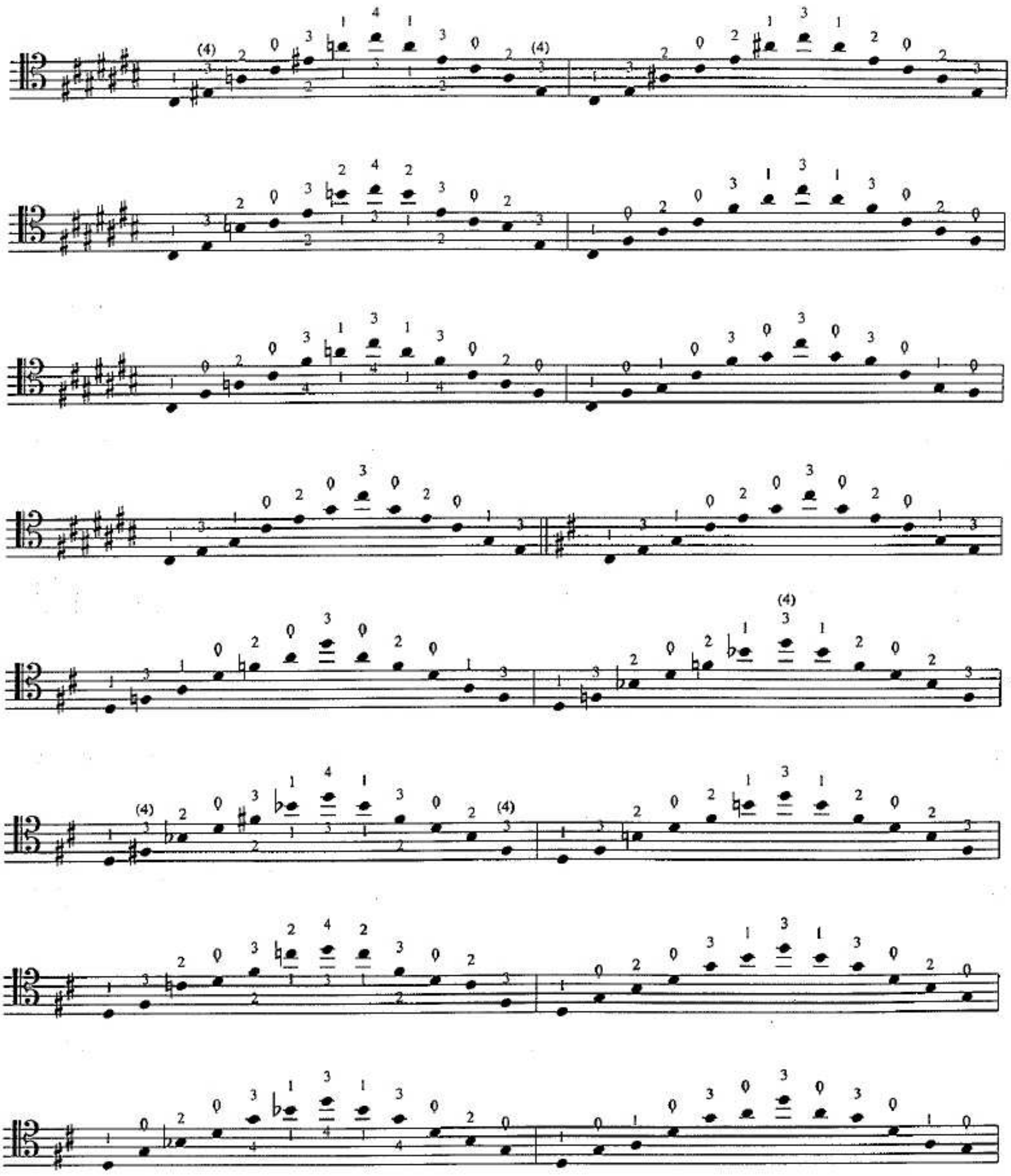


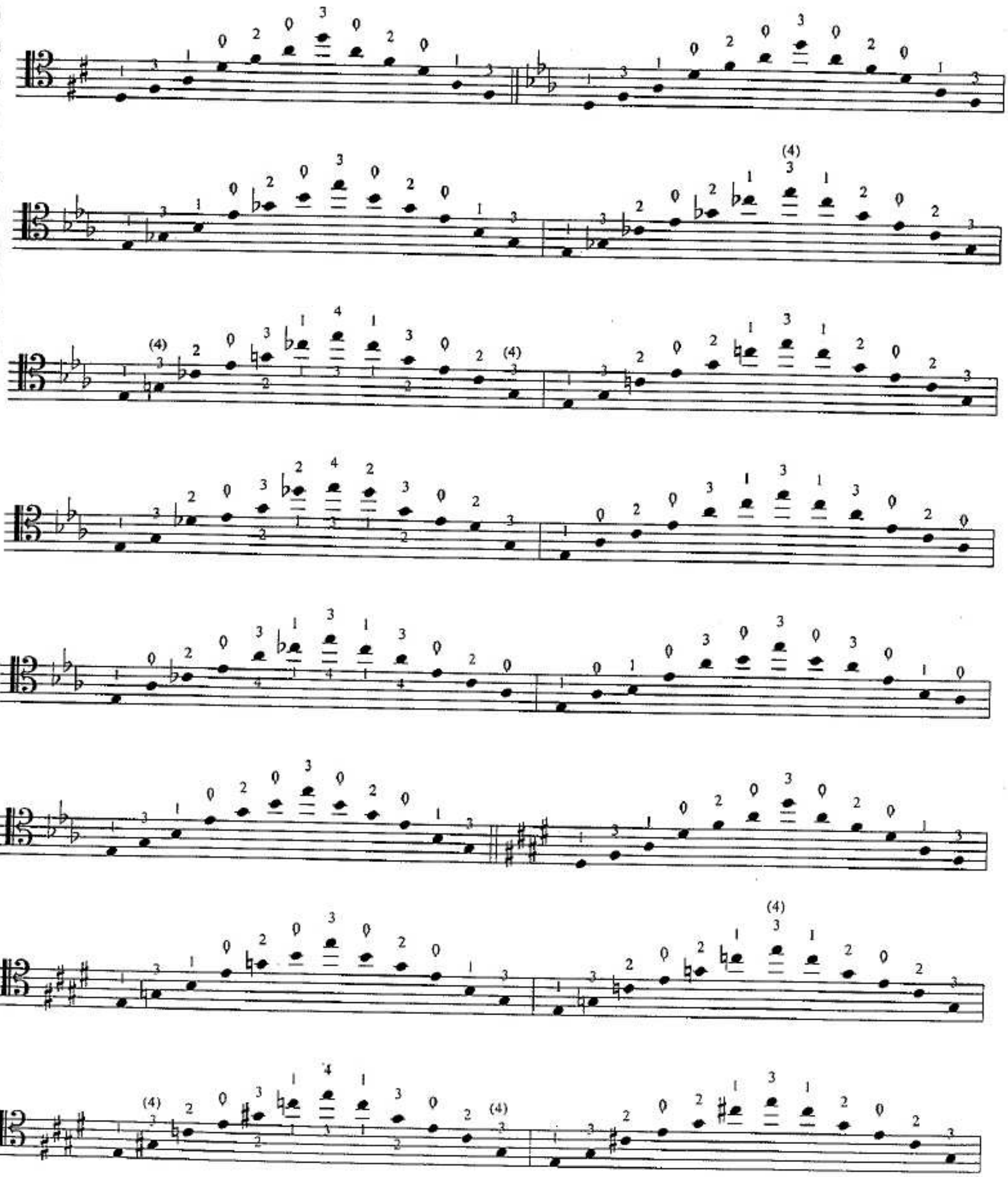
(4)

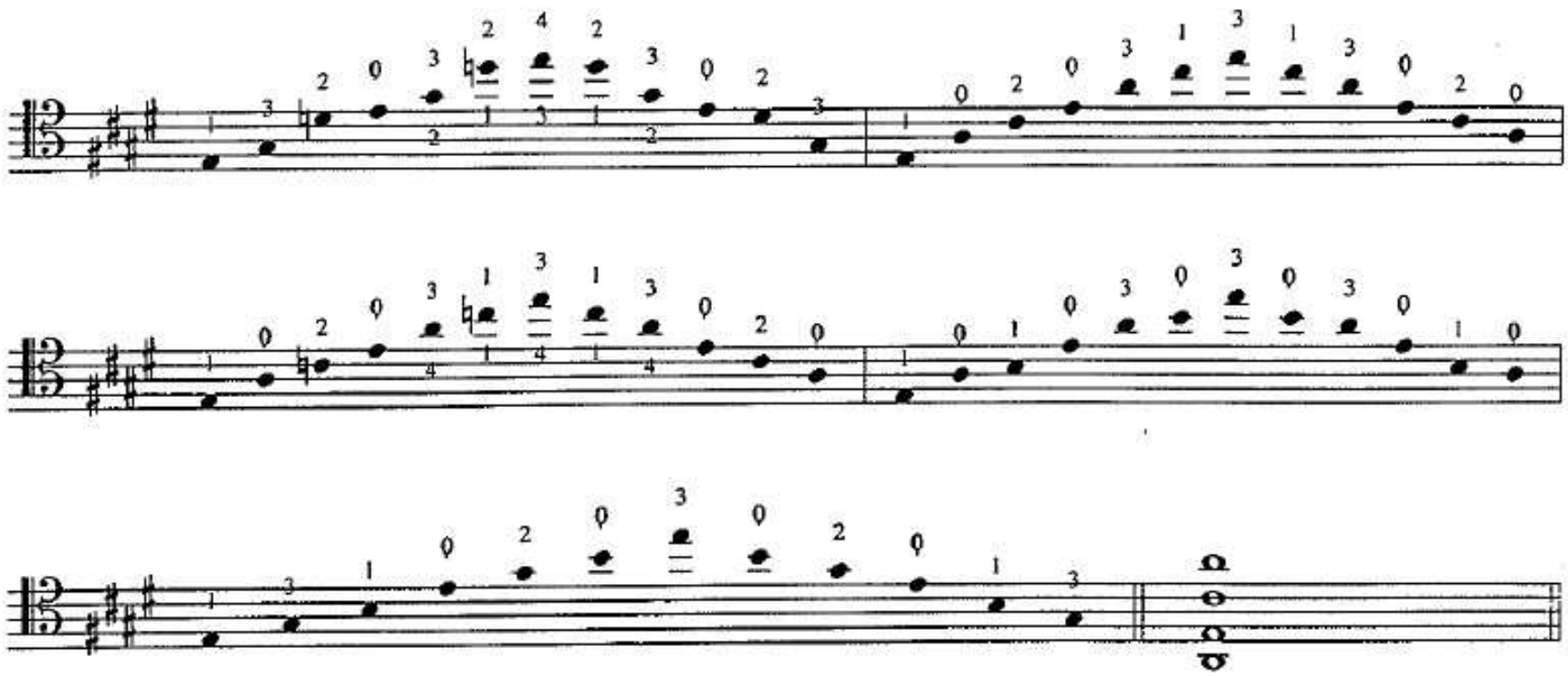












14
Scales on One String

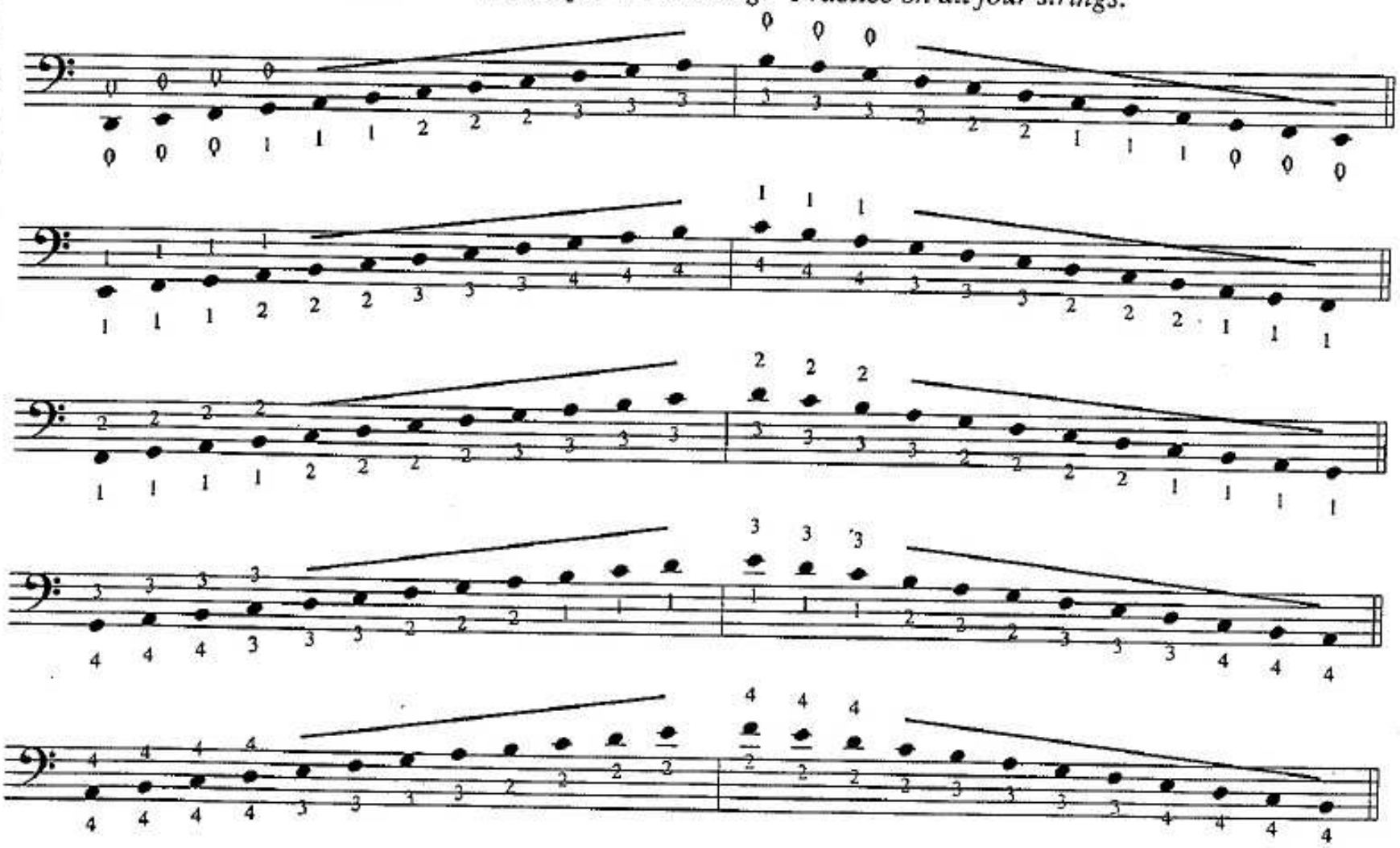
Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

Primary Patterns:

Practice this exercise on all four strings in all the major and minor keys.

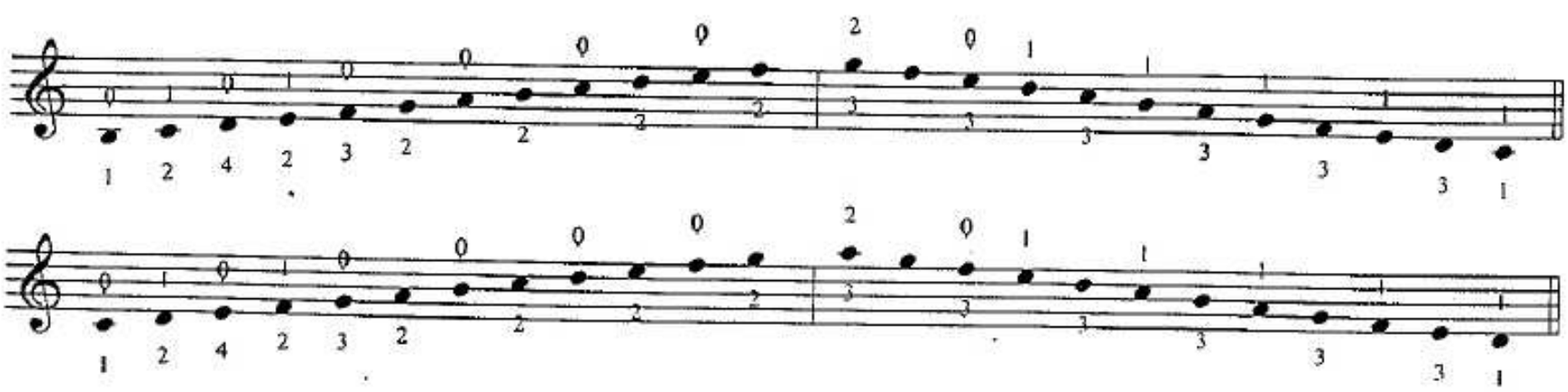
ONE-FINGER SCALES

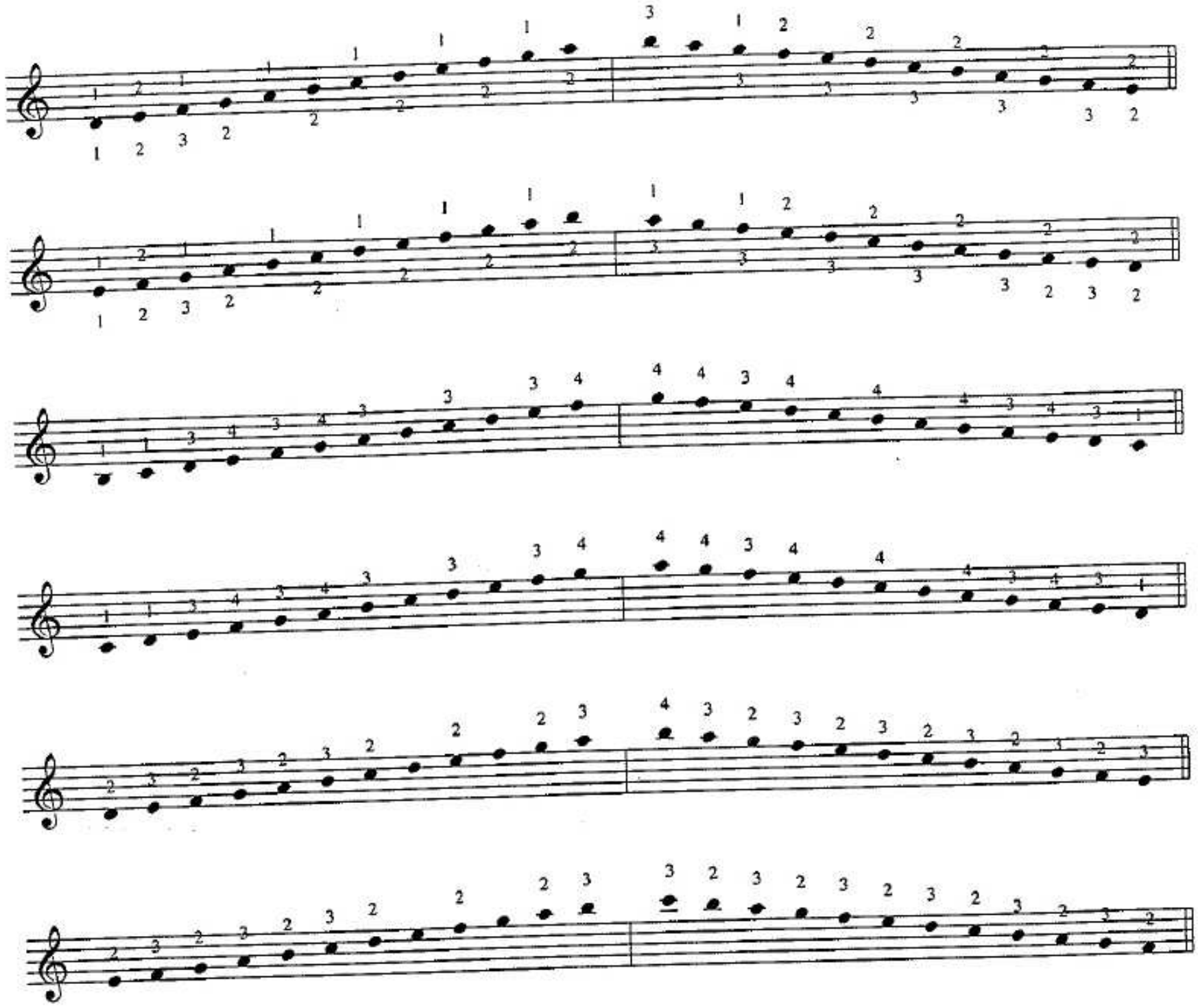
Written for the C-string. Practice on all four strings.



TWO-FINGER SCALES

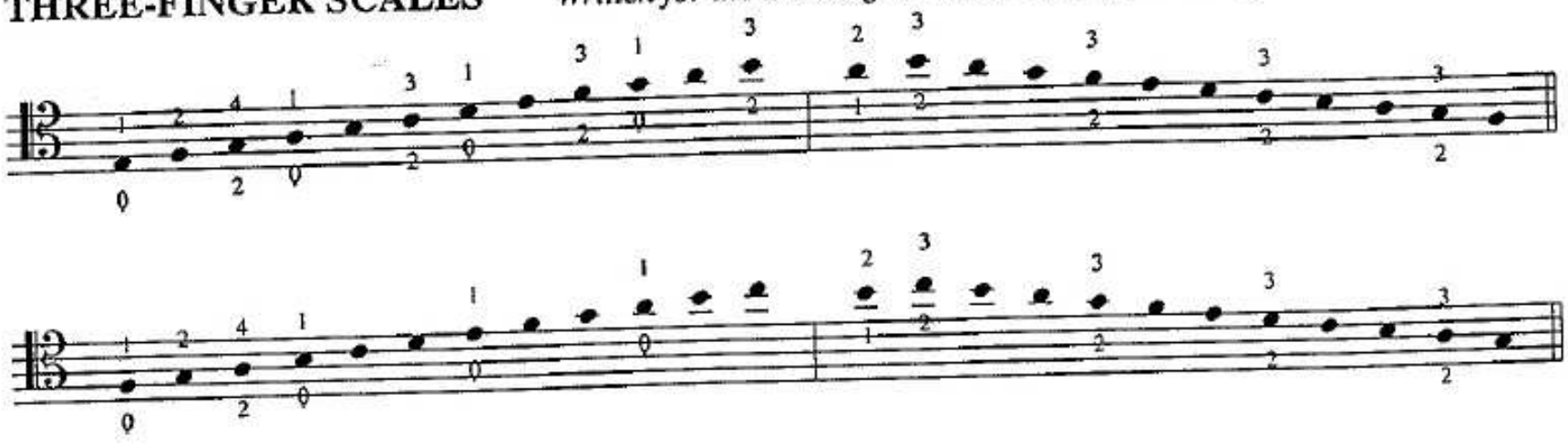
Written for the A-string. Practice on all four strings.

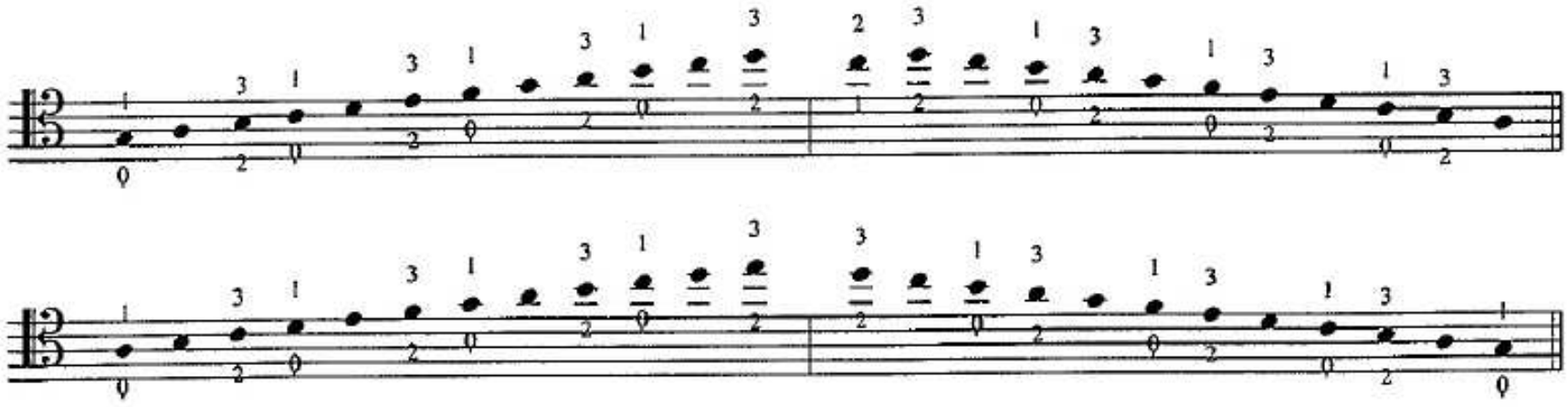




THREE-FINGER SCALES

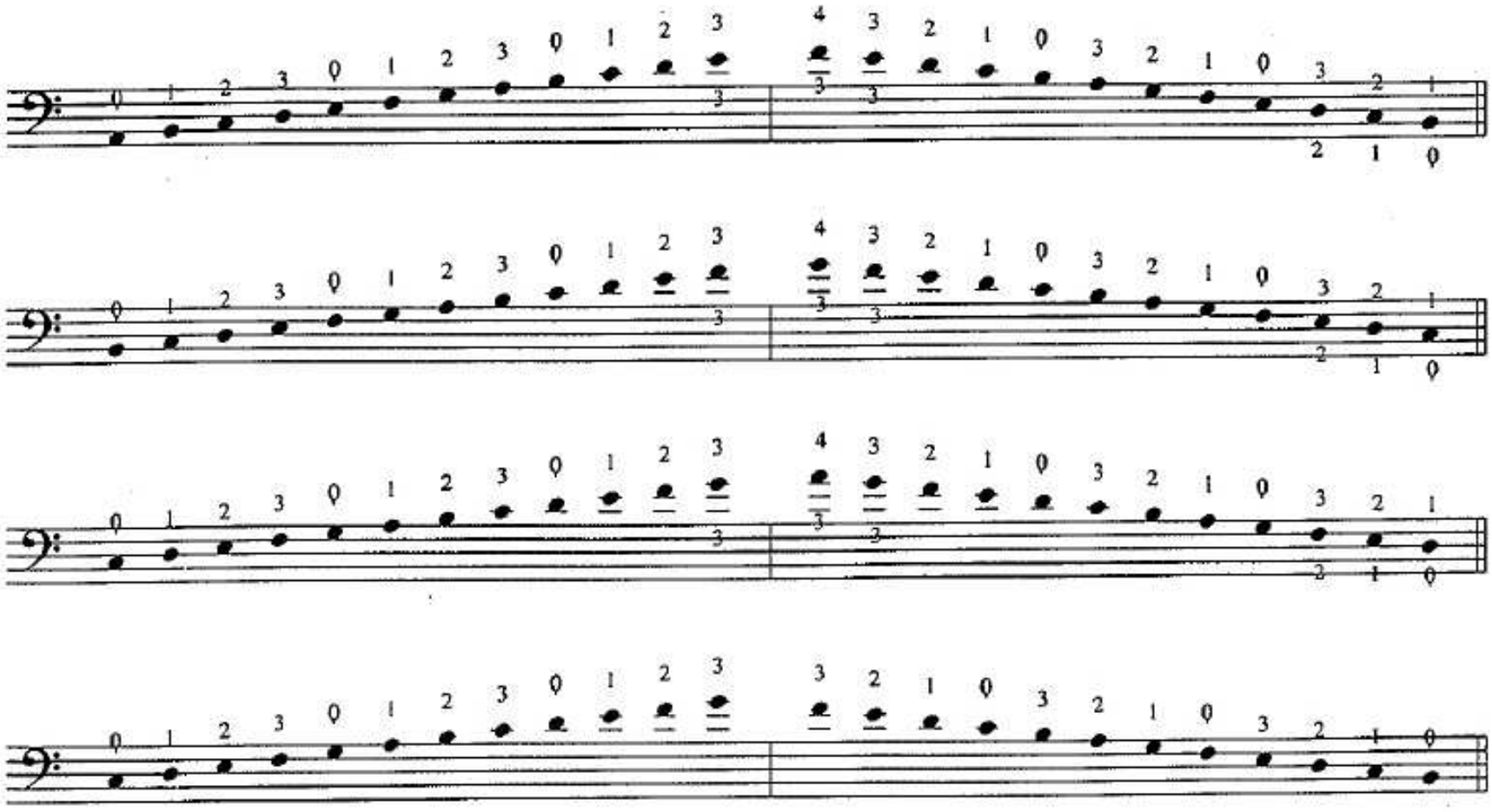
Written for the D-string. Practice on all four strings.





FOUR-FINGER SCALES

Written for the G-string. Practice on all four strings.

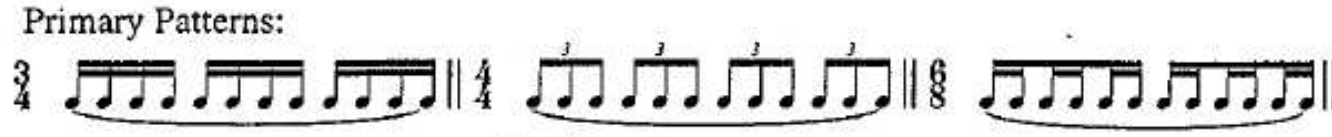


15
Broken Thirds, Fourths, Fifths and Sixths on One String

THIRDS ON ONE STRING

Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

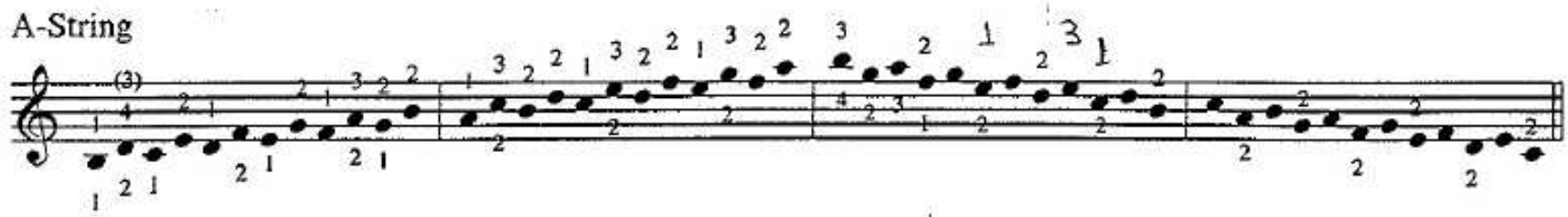
Primary Patterns:



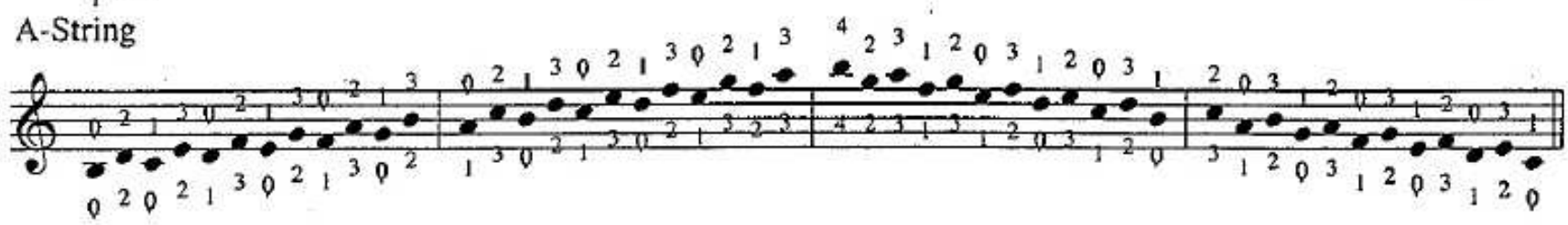
Also slur two measures.

Practice in all the keys. Seven different fingerings are given and can be applied to any string. The two fingerings shown on the first system are the standard fingerings for broken thirds. These should be mastered before experimenting with the other fingerings shown later. In the first bar, depending upon the key, use either 3 - 2 or 4 - 2 on the notes where no fingerings are given.

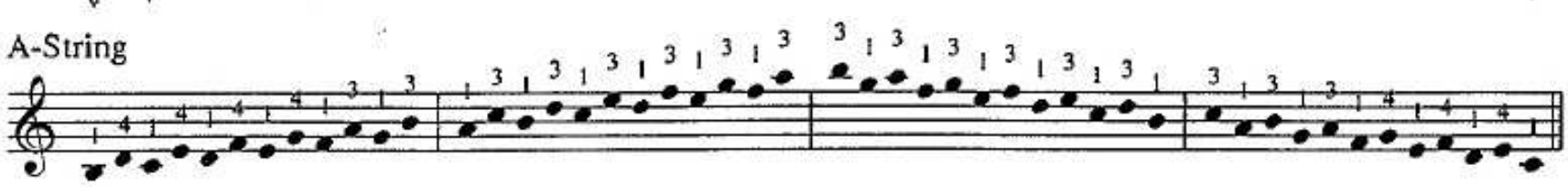
A-String



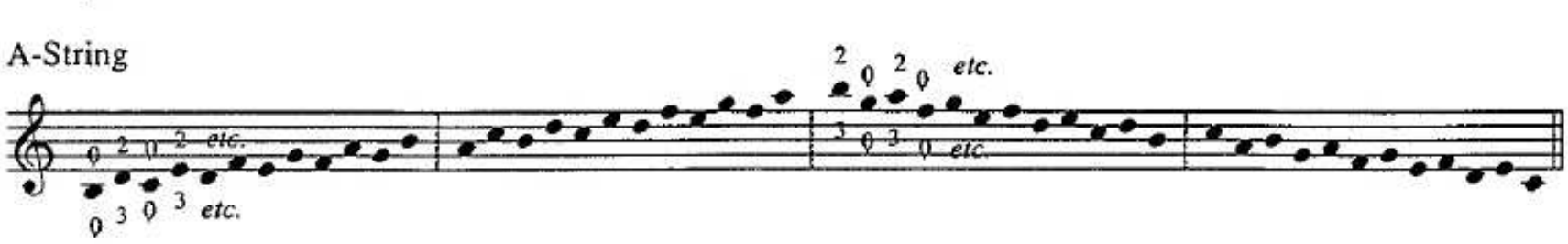
A-String



A-String



A-String

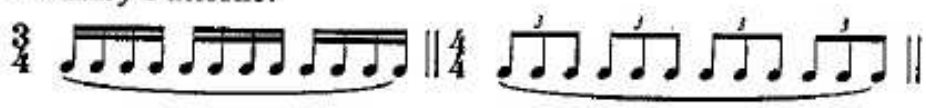


FOURTHS ON ONE STRING

(Preparatory exercises for fourth interval artificial harmonics)

Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

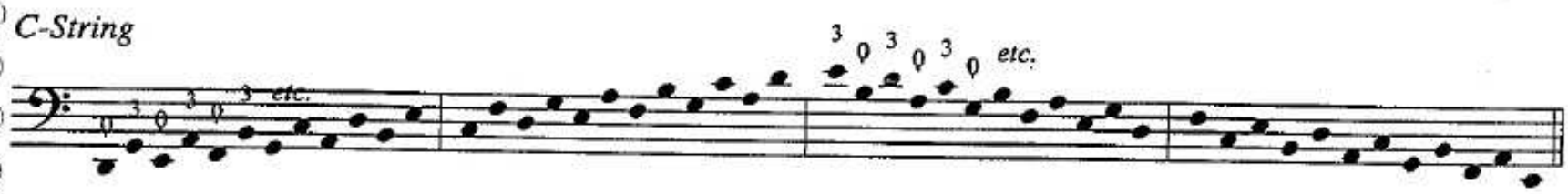
Primary Patterns:



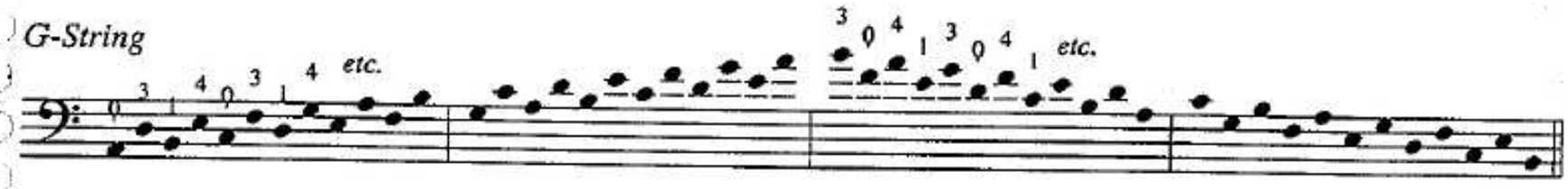
Also slur two measures.

Practice in all the keys. All four of the following fingerings may be applied to any string.

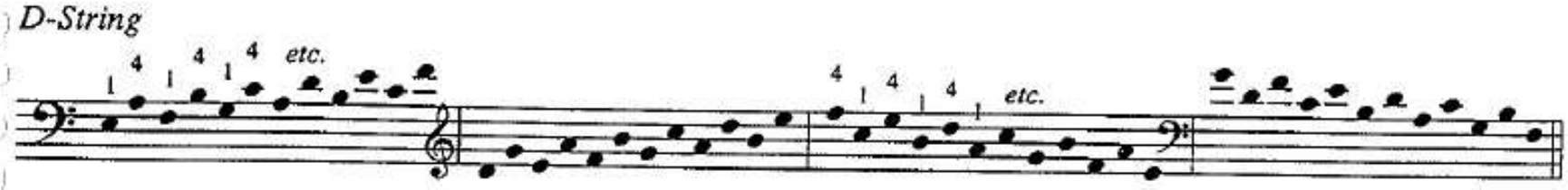
C-String



G-String



D-String



A-String

FIFTHS ON ONE STRING

(Preparatory exercises for fifth interval artificial harmonics)

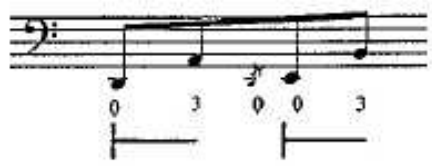
Groups of eight notes. PATTERNS: *B1, B2, B4, B8*
R1, R2, R4, R8

Primary Patterns:

Also slur two measures.

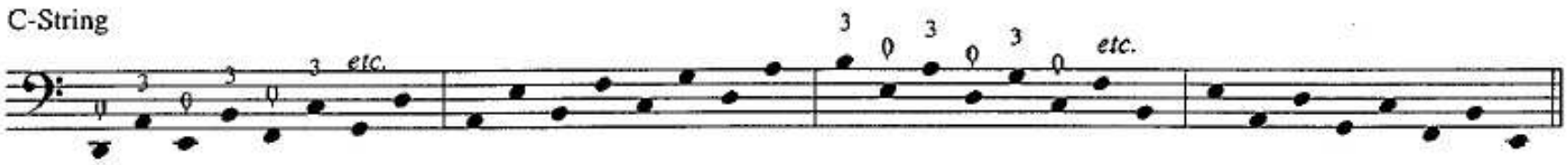
Practice in all the keys. This exercise can be played in two different ways:

1) by shifting in the traditional manner and maintaining the stretch of a fifth throughout.



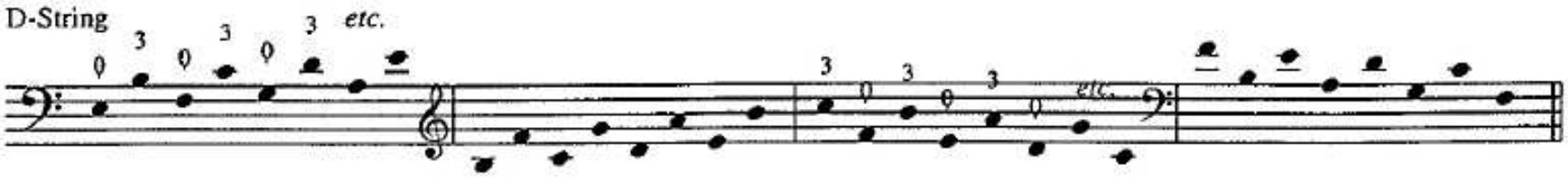
2) with "creeping" fingering. (Distance between the thumb and the third finger varies).

C-String

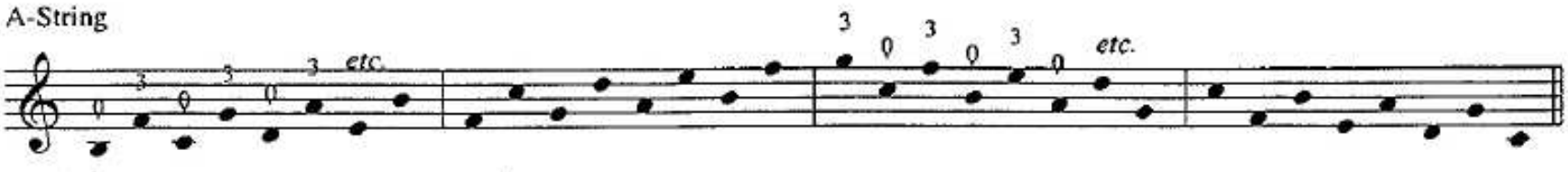


G-String

D-String



A-String



SIXTHS ON ONE STRING

Groups of eight notes. PATTERNS: ***B1, B2, B4, B8***
R1, R2, R4, R8

Primary Patterns:

Practice in all the keys. This exercise can be played in three different ways:

1) shifting one step while maintaining the stretch of a *fifth*

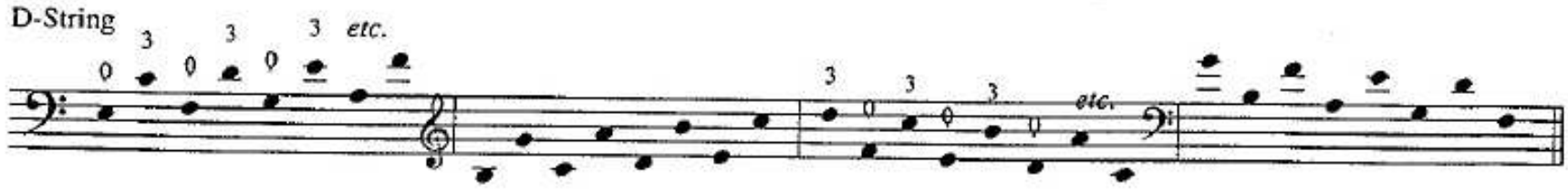
2) maintaining the stretch of a *sixth* throughout (in the manner of tenths)
This is only possible for cellists with large hands.

3) "creeping" fingering (distance between thumb and third finger varies)

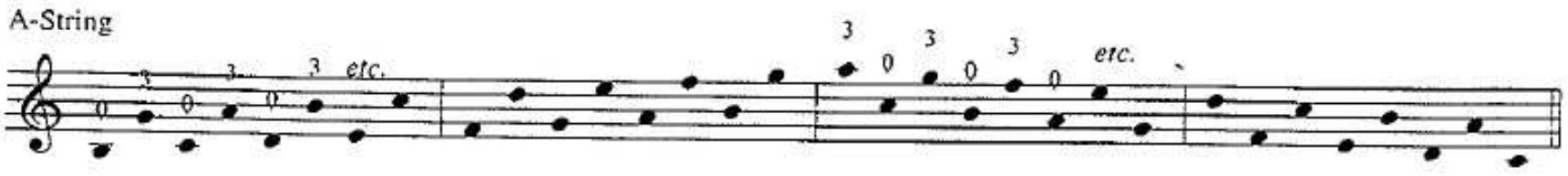
C-String

G-String

D-String



A-String



16
Arpeggios on One String

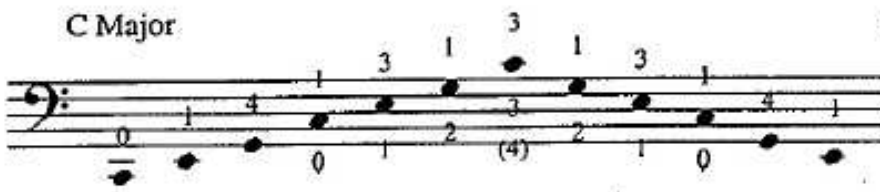
TRIADS

Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

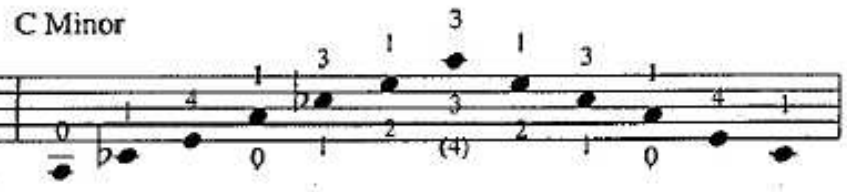
Primary Patterns:

Written for the C-string, the exercises in this section are to be practiced on all four strings.

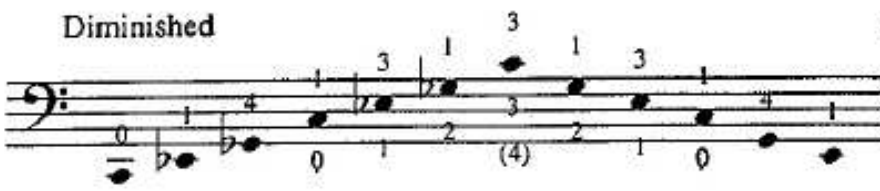
C Major



C Minor

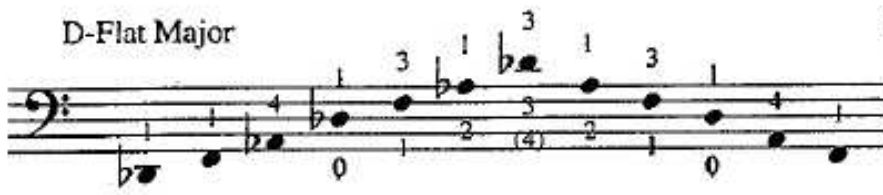


Diminished

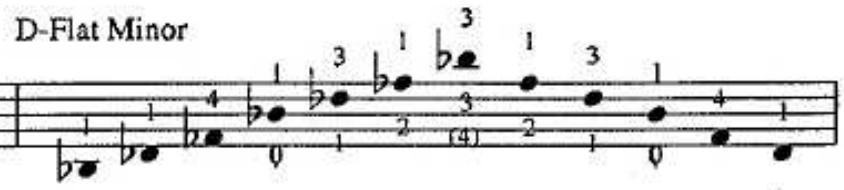


Augmented

D-Flat Major



D-Flat Minor



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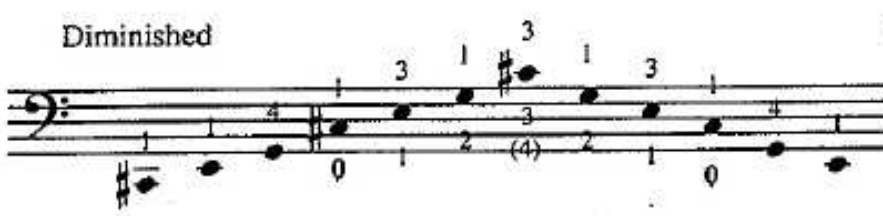
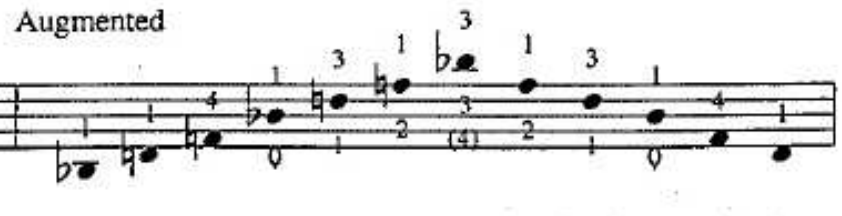
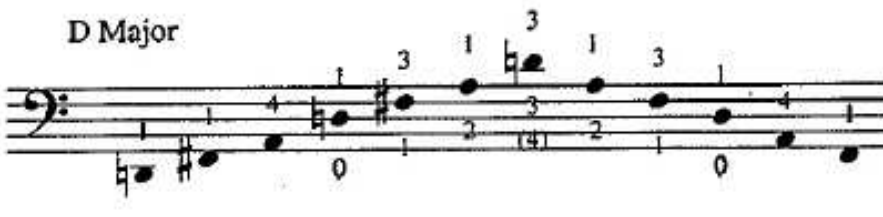


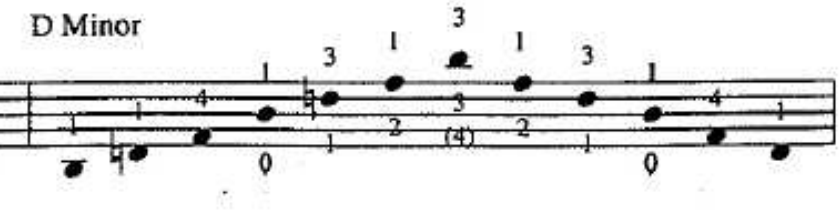
Augmented



D Major

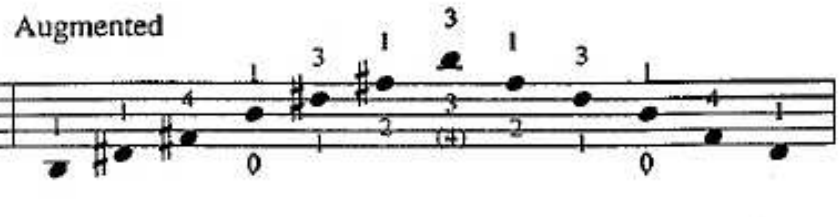


D Minor



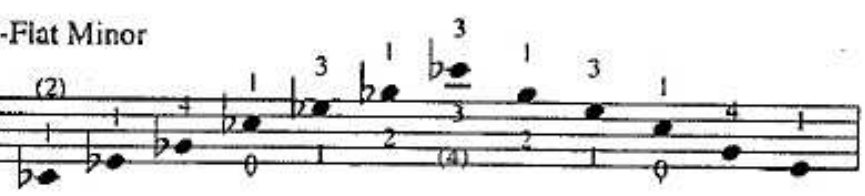
Diminished

Augmented



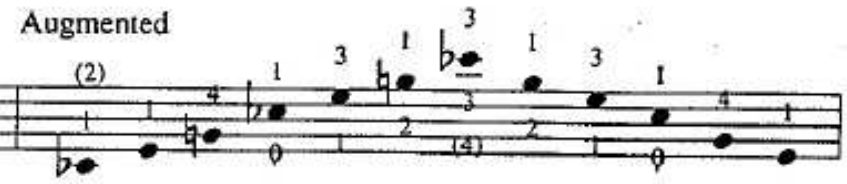
E-Flat Major

E-Flat Minor



Diminished

Augmented



E Major

E Minor

Diminished

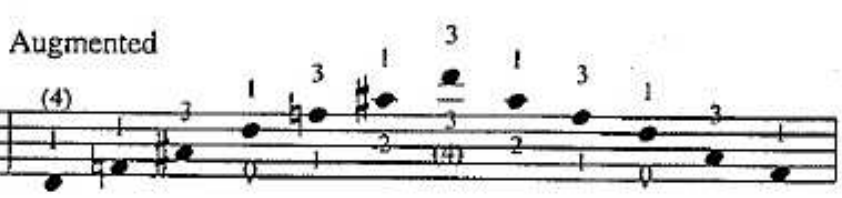
Augmented

F Major

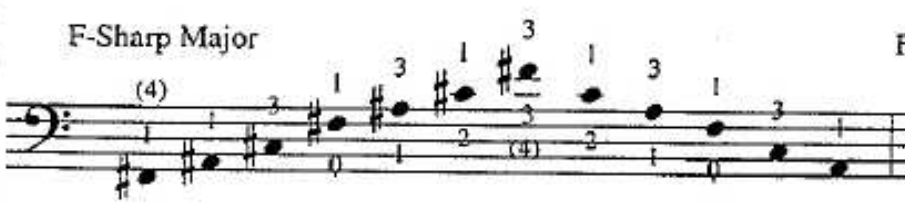
F Minor

Diminished

Augmented



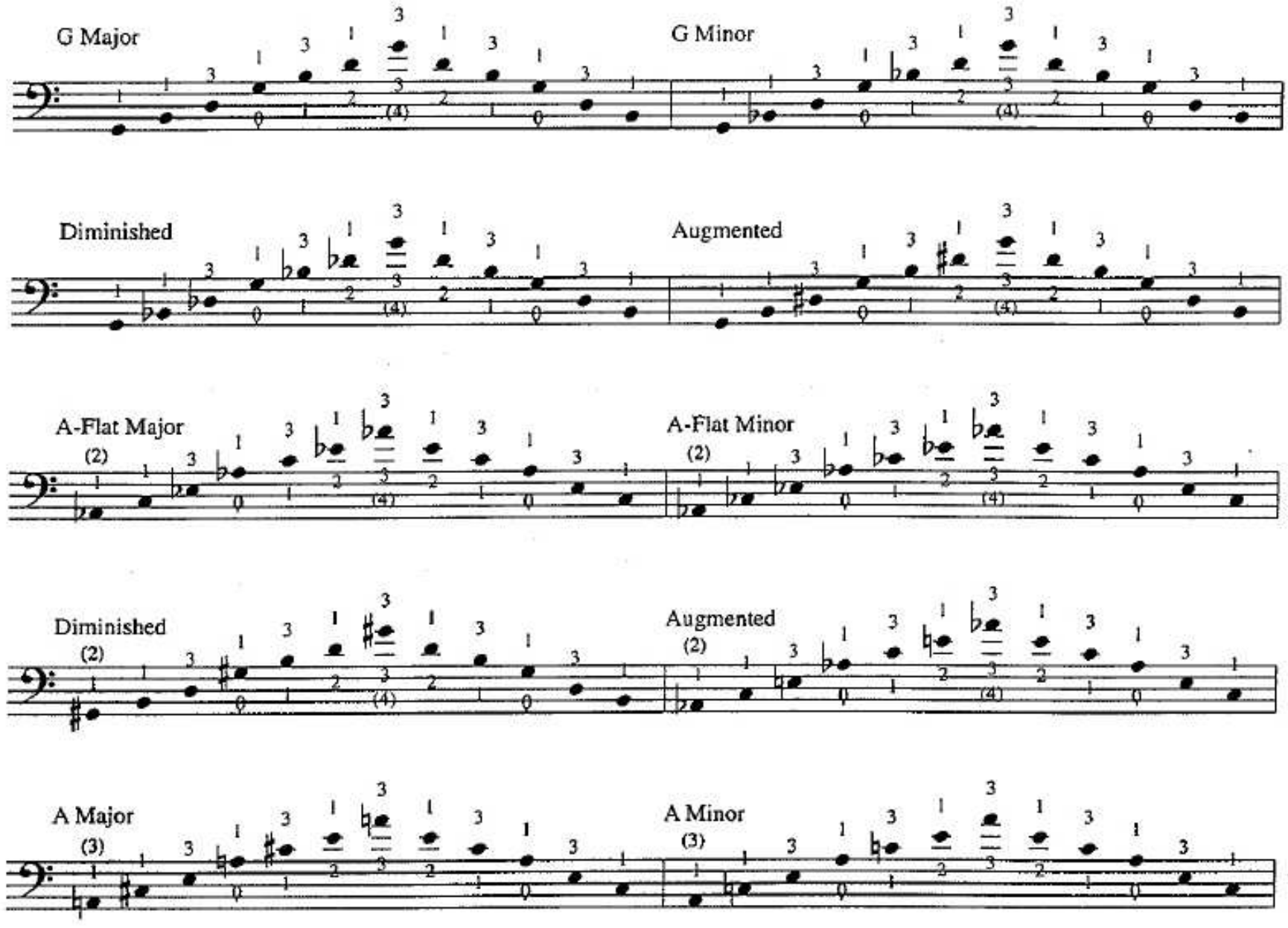
F-Sharp Major

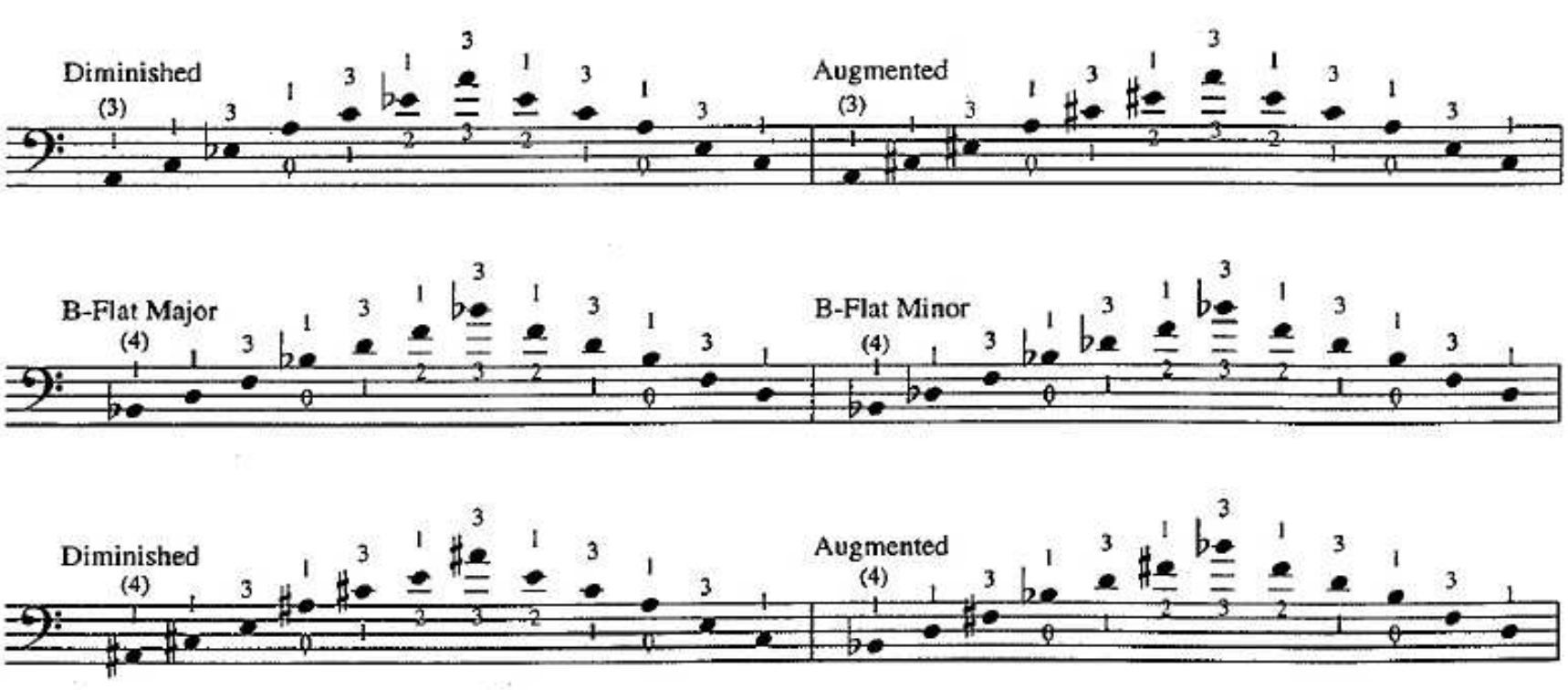


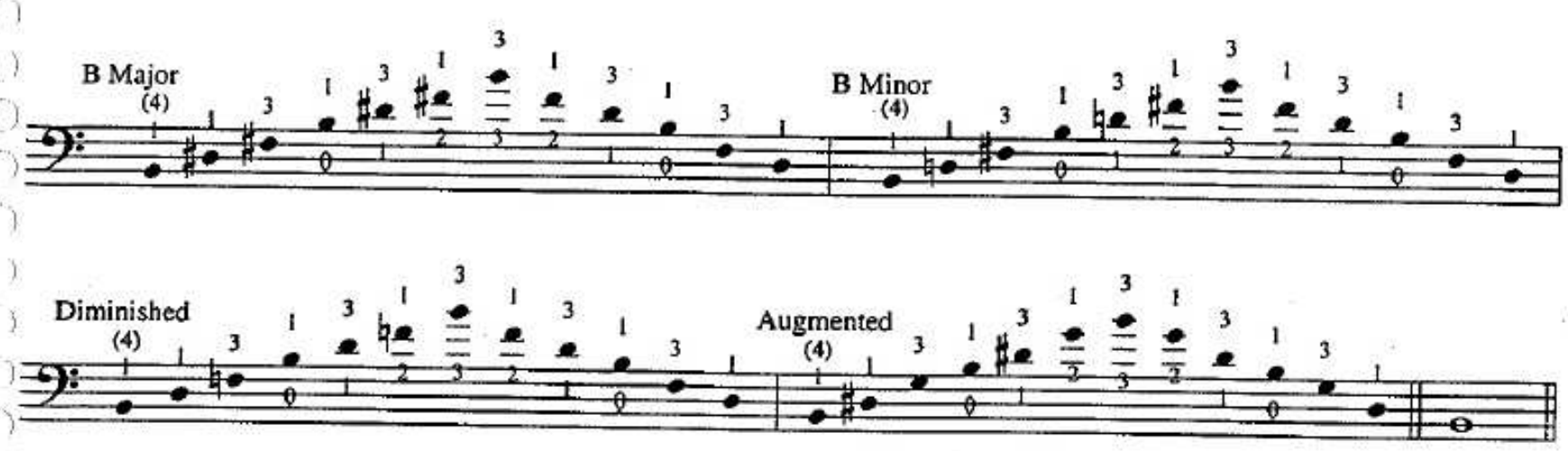
F-Sharp Minor

Diminished

Augmented


G Major
G Minor
Diminished
Augmented
A-Flat Major
A-Flat Minor
Diminished
Augmented
A Major
A Minor


Diminished
Augmented
B-Flat Major
B-Flat Minor
Diminished
Augmented

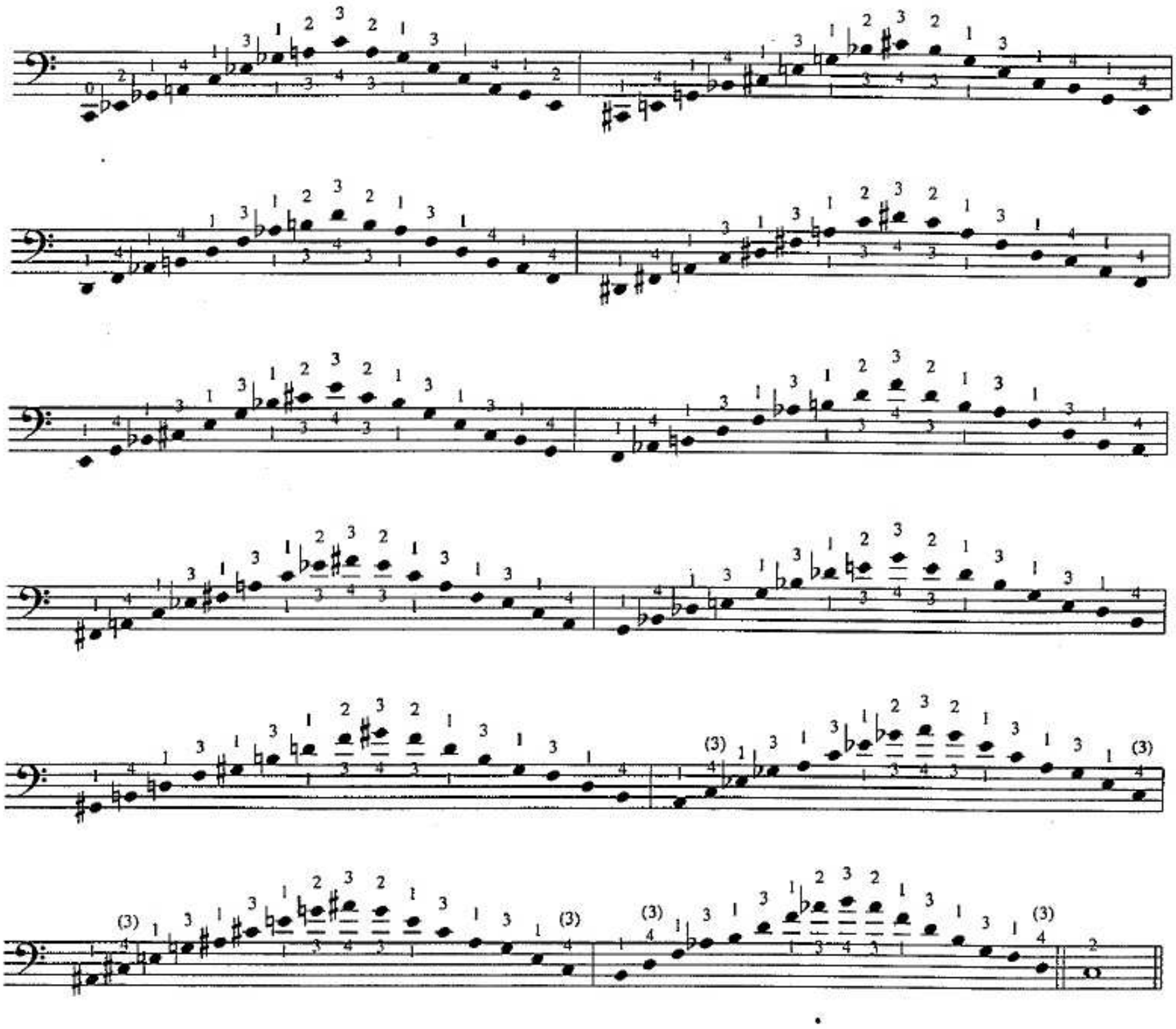

B Major
(4)
B Minor
(4)
Diminished
(4)
Augmented
(4)

DIMINISHED SEVENTHS

Groups of eight notes. PATTERNS: ***B1, B2, B4, B8, B16***
R1, R2, R4, R8, R16

Primary Patterns:

Written for the C-string, the exercises in this section are to be practised on all four strings.

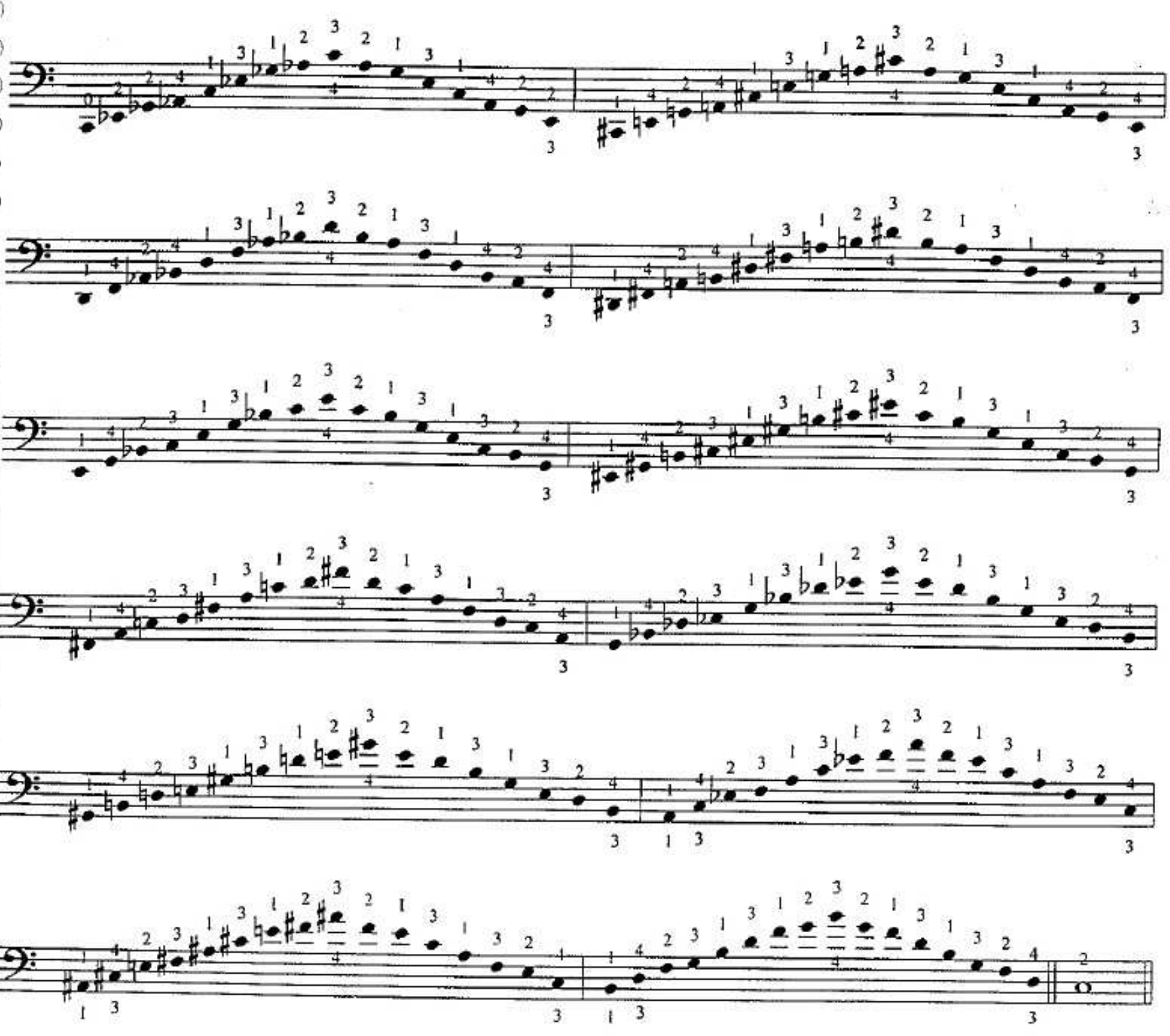


DOMINANT SEVENTHS

Groups of eight notes. PATTERNS: ***B1, B2, B4, B8, B16***
R1, R2, R4, R8, R16

Primary Patterns:

Written for the C-string, the exercises in this section are to be practiced on all four strings.

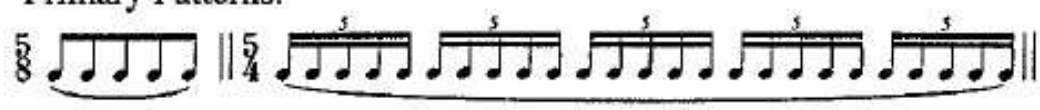


17

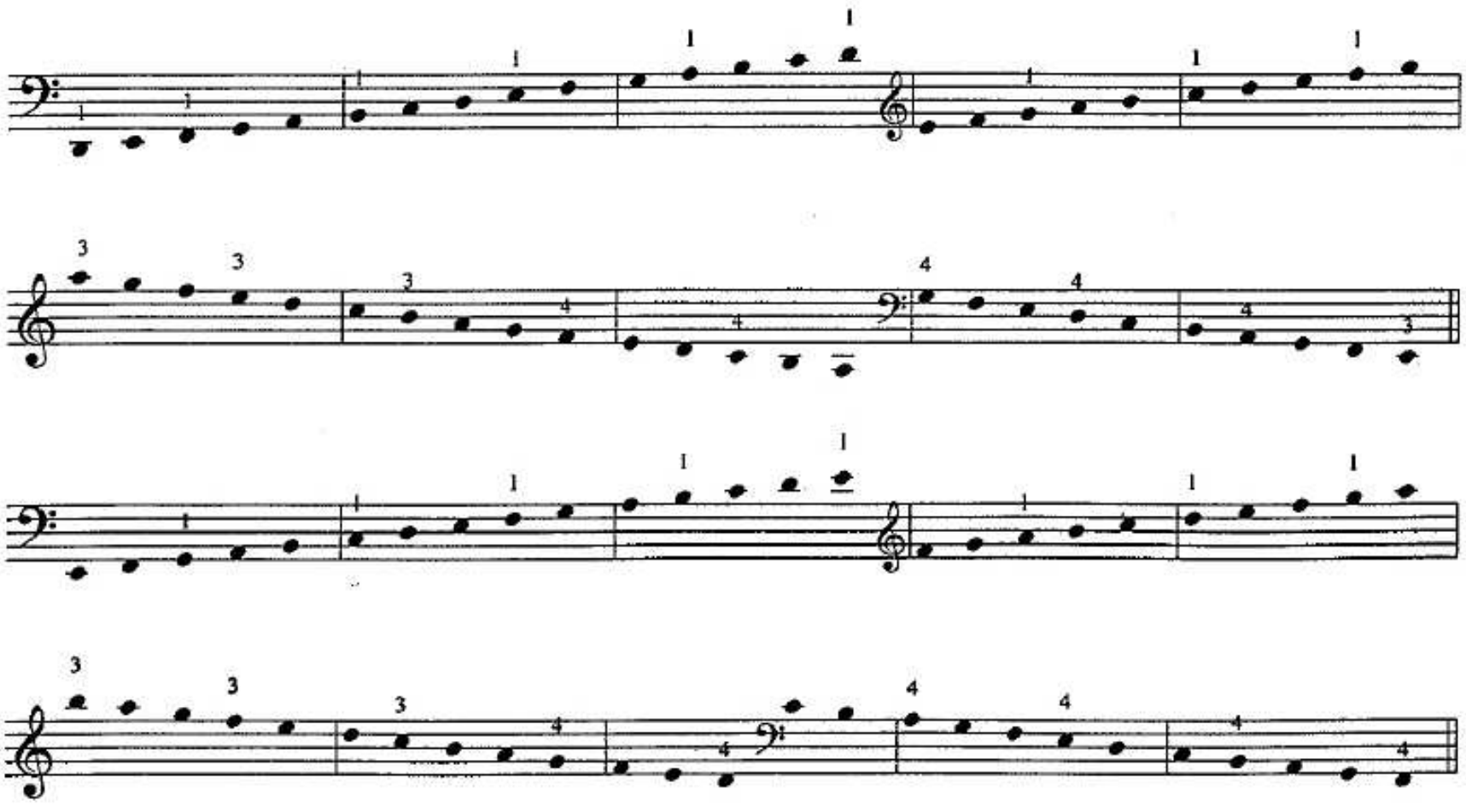
Scales of Varied Length and Different Groups of Notes

Groups of five notes. PATTERNS: ***B1, B5***
R1, R5

Primary Patterns:

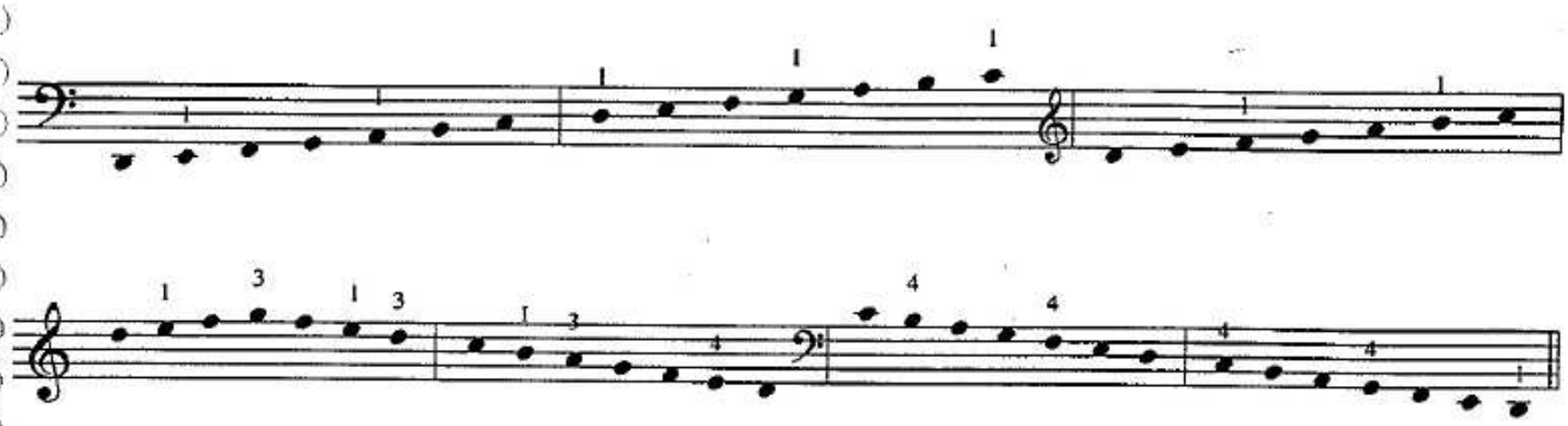


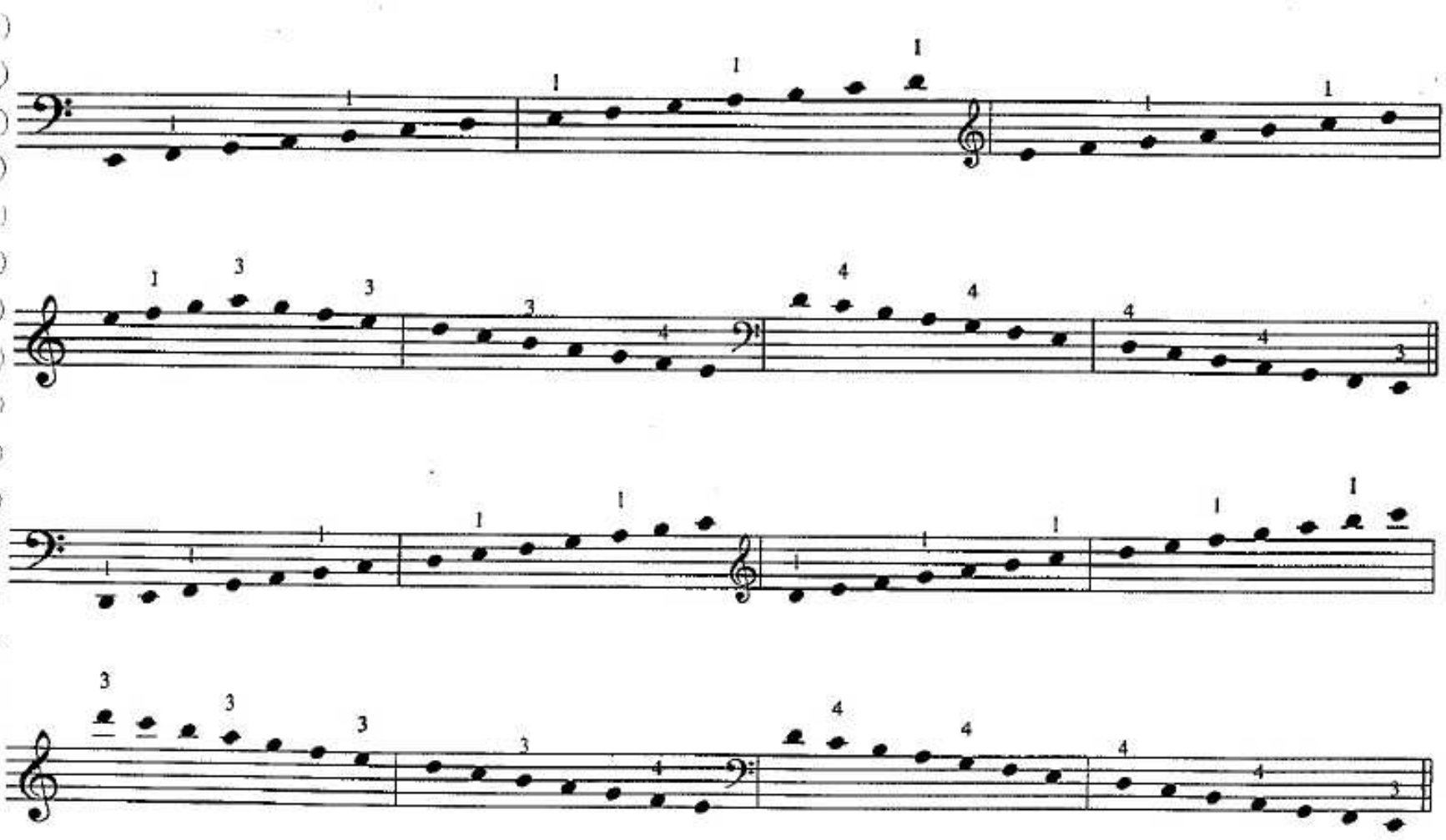
Practice these scales in all the major and melodic minor keys. The fingerings notated should be applied to all keys.



Groups of seven notes. PATTERNS: ***B1, B7***
R1, R7

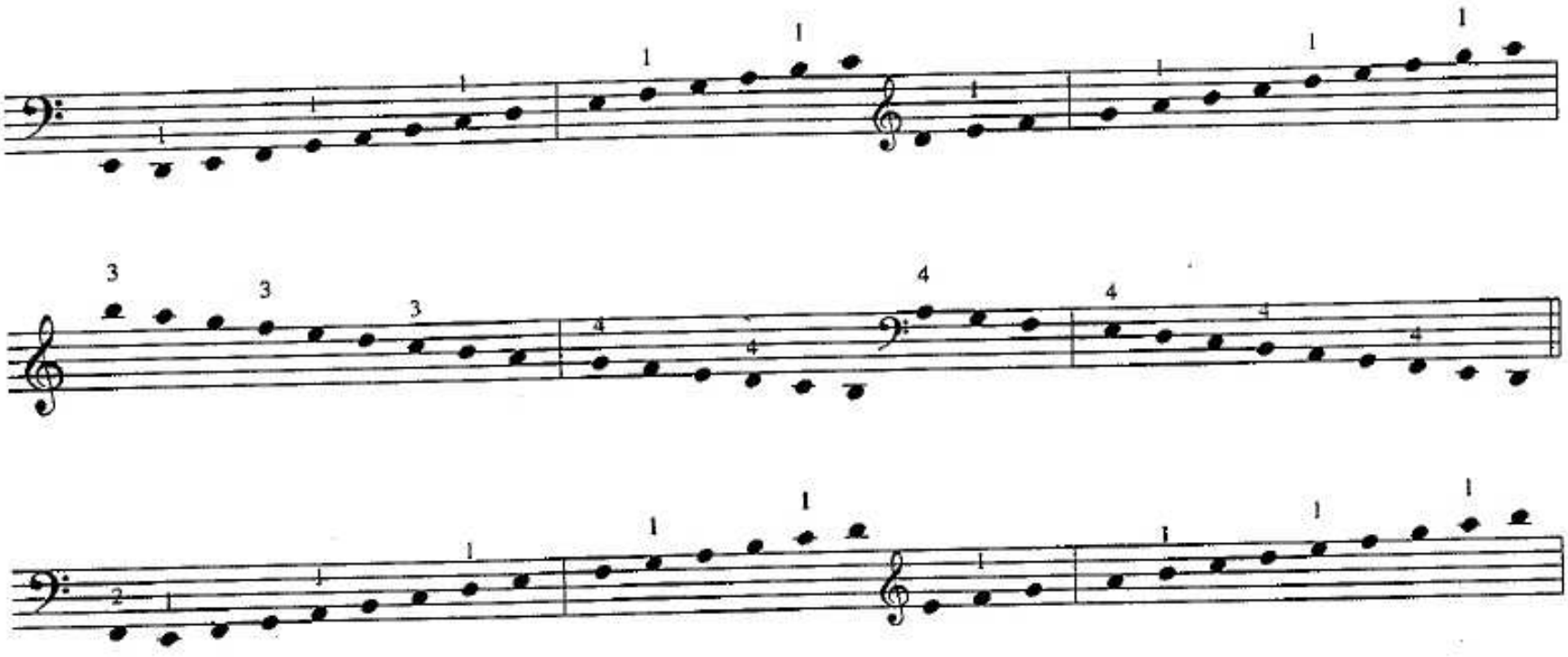
Primary Patterns:

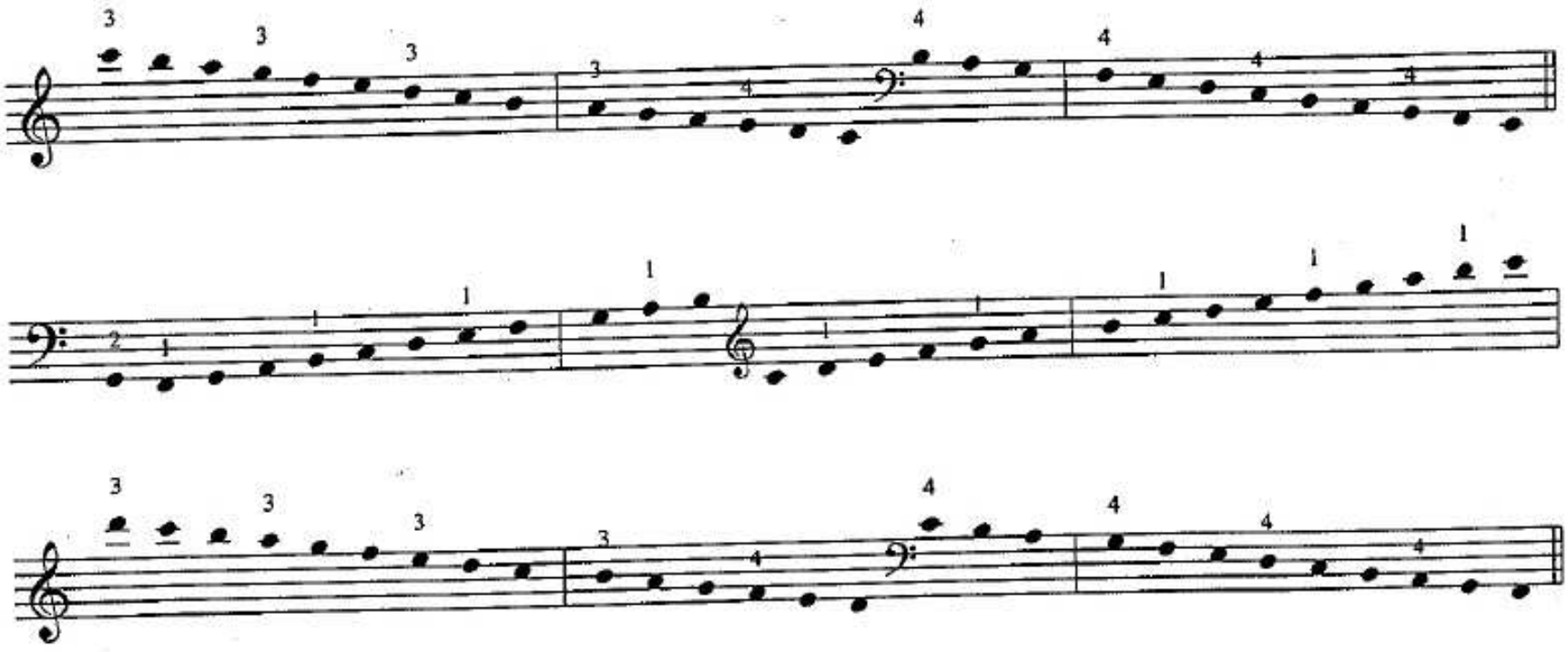




Groups of nine notes. PATTERNS: ***B1, B3, B9***
R1, R3, R9

Primary Patterns:





18

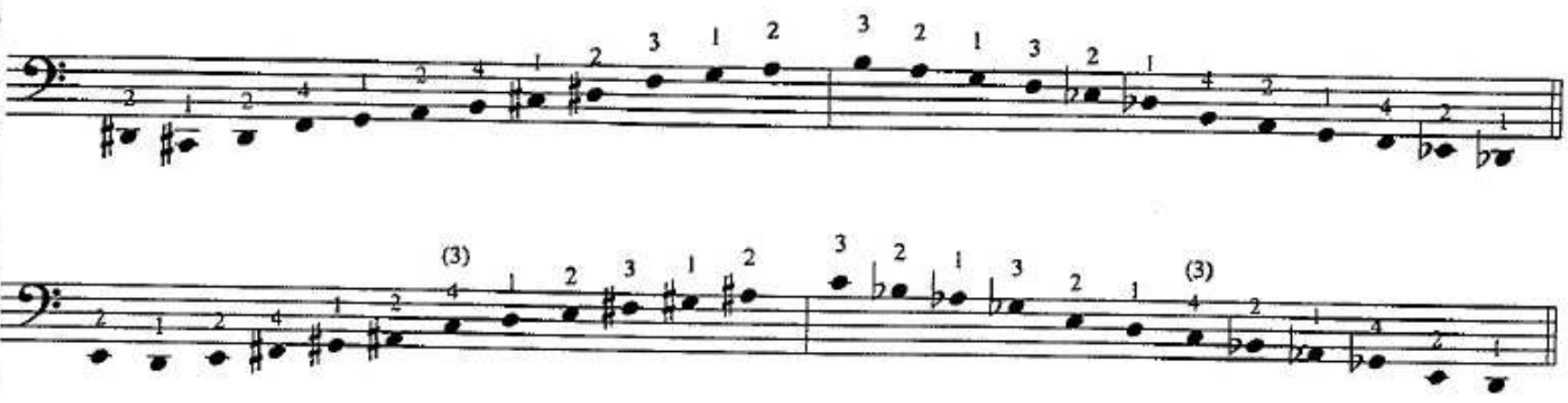
The Whole-Tone Scale

Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

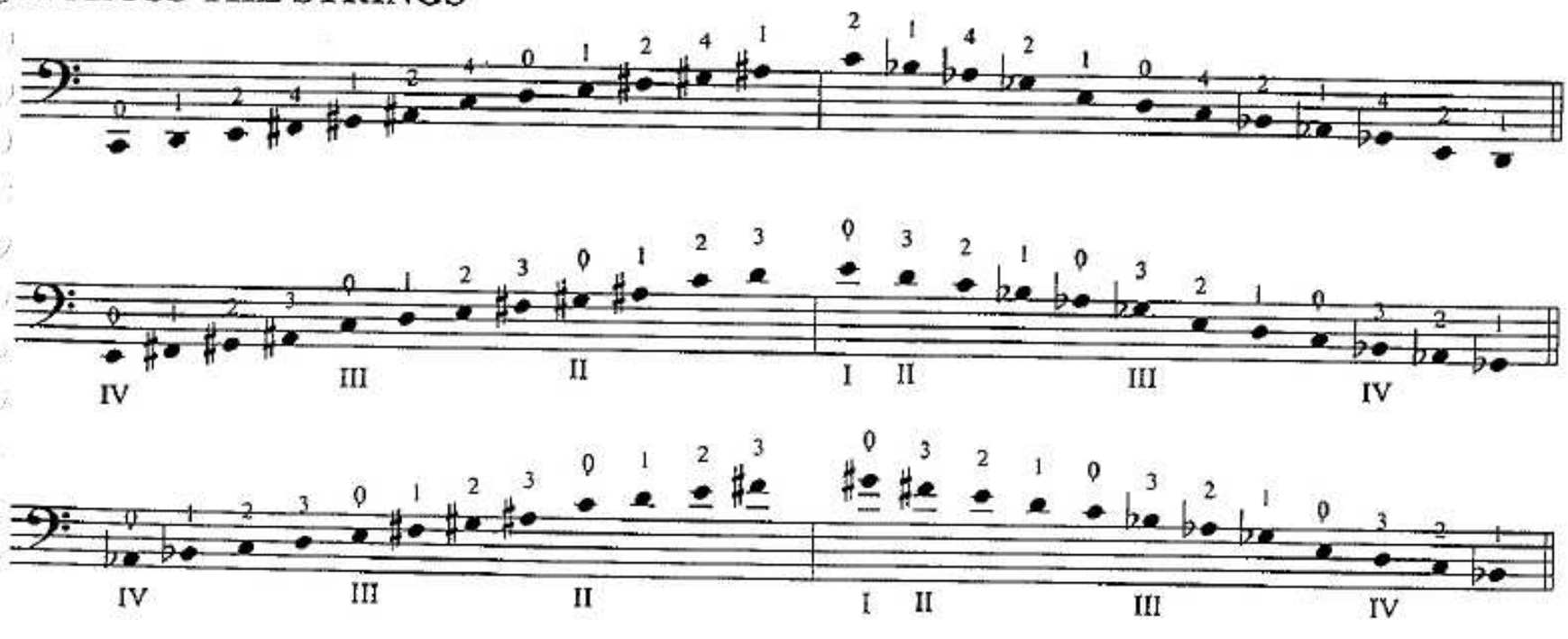
Primary Patterns:

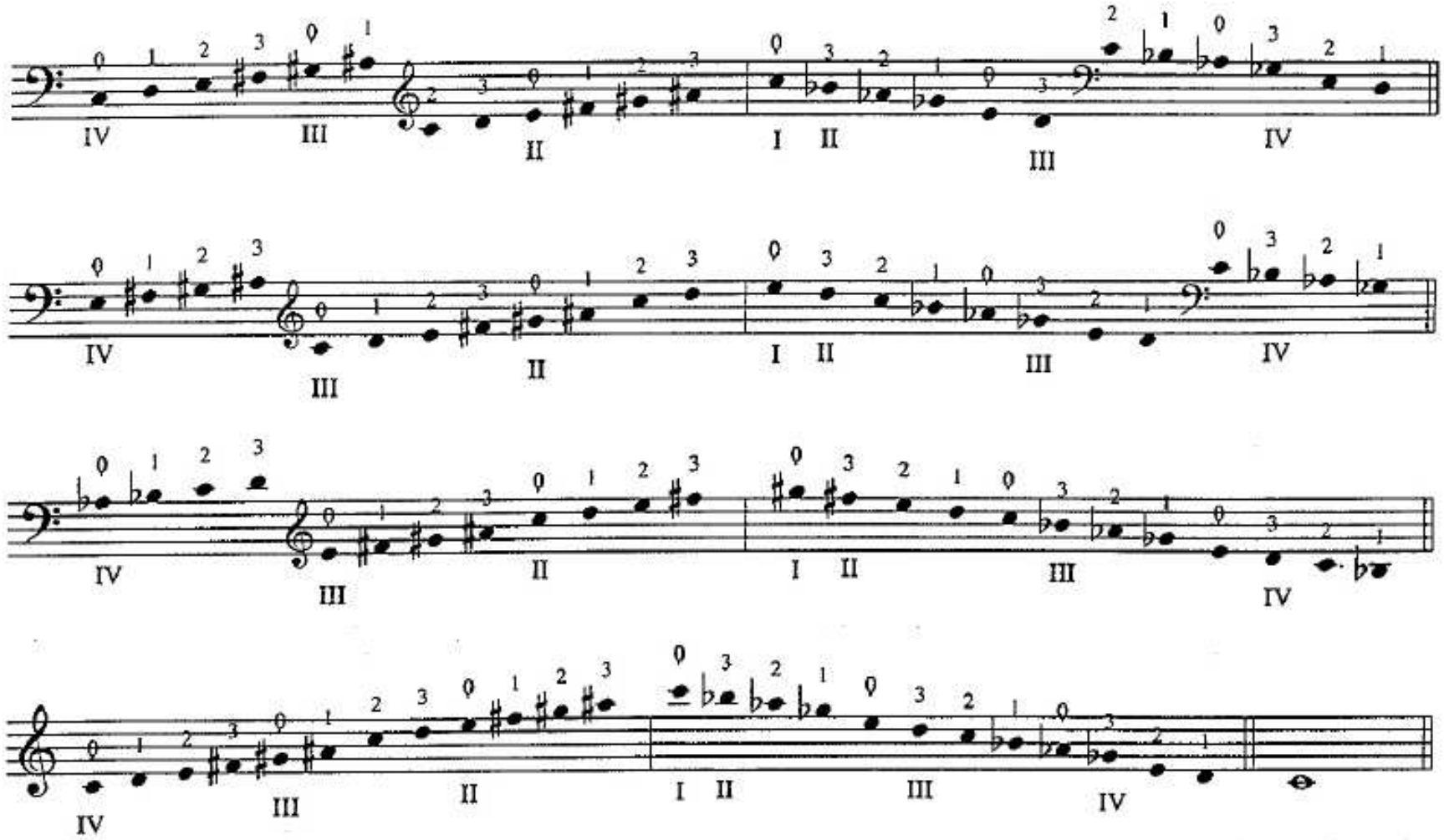
Also slur two measures.

ON ONE STRING



ACROSS THE STRINGS

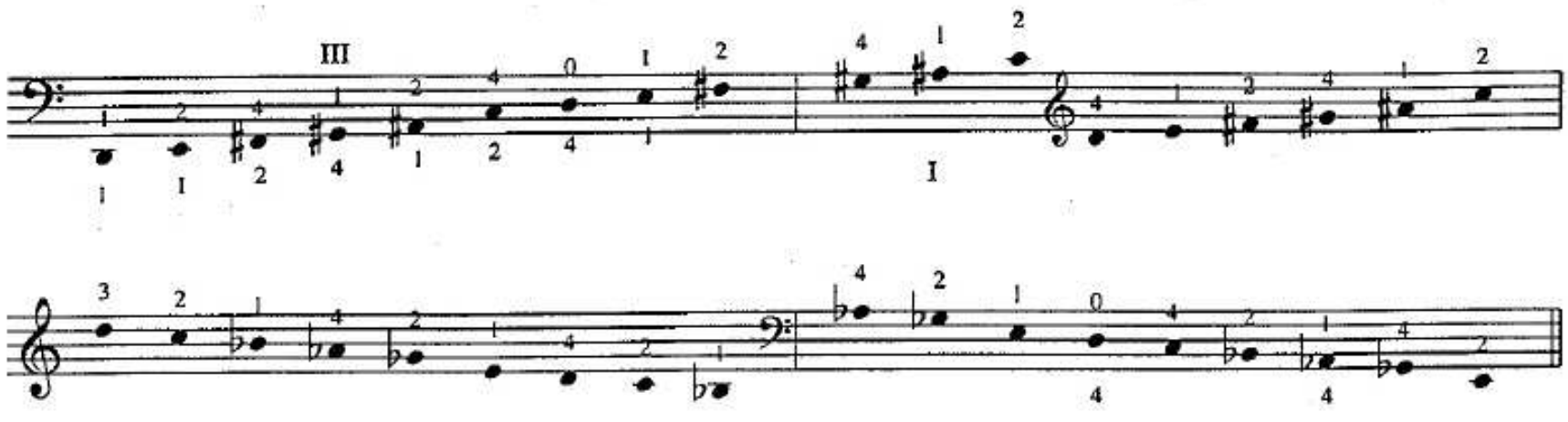


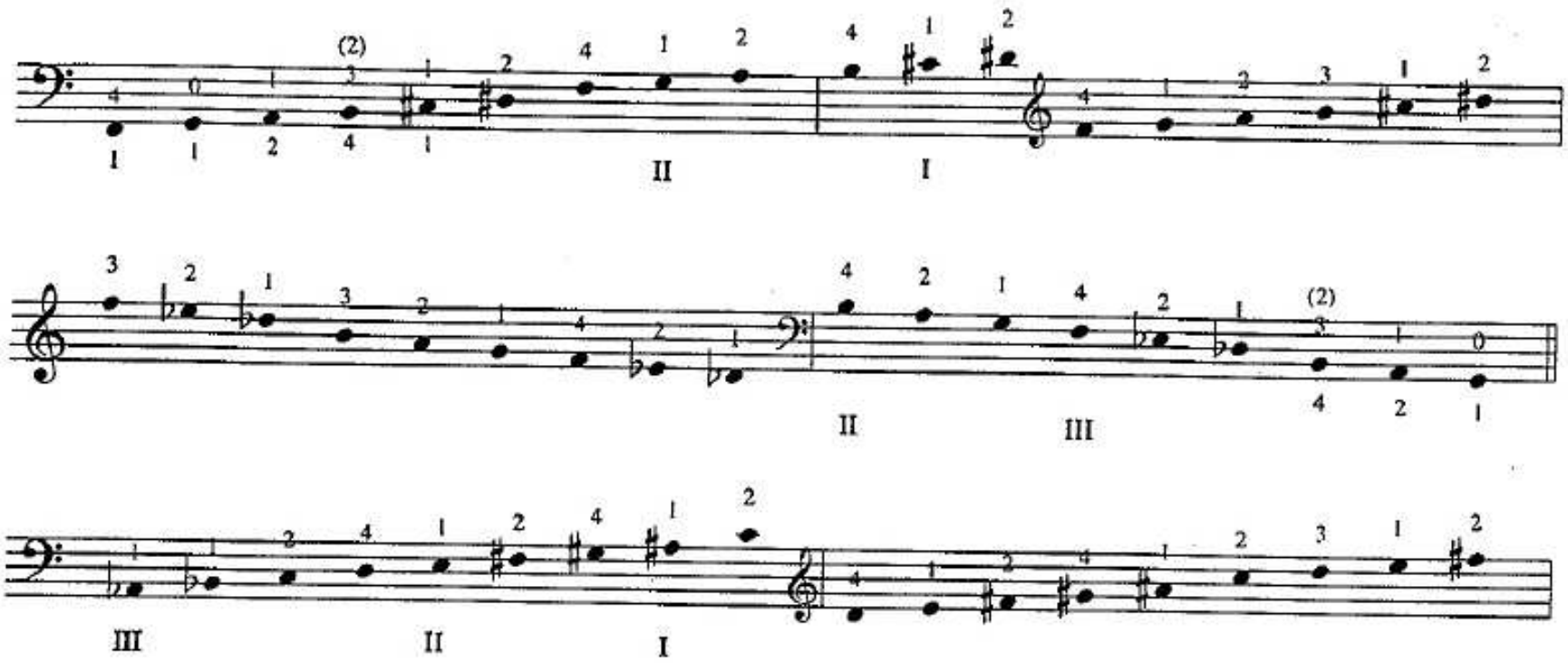


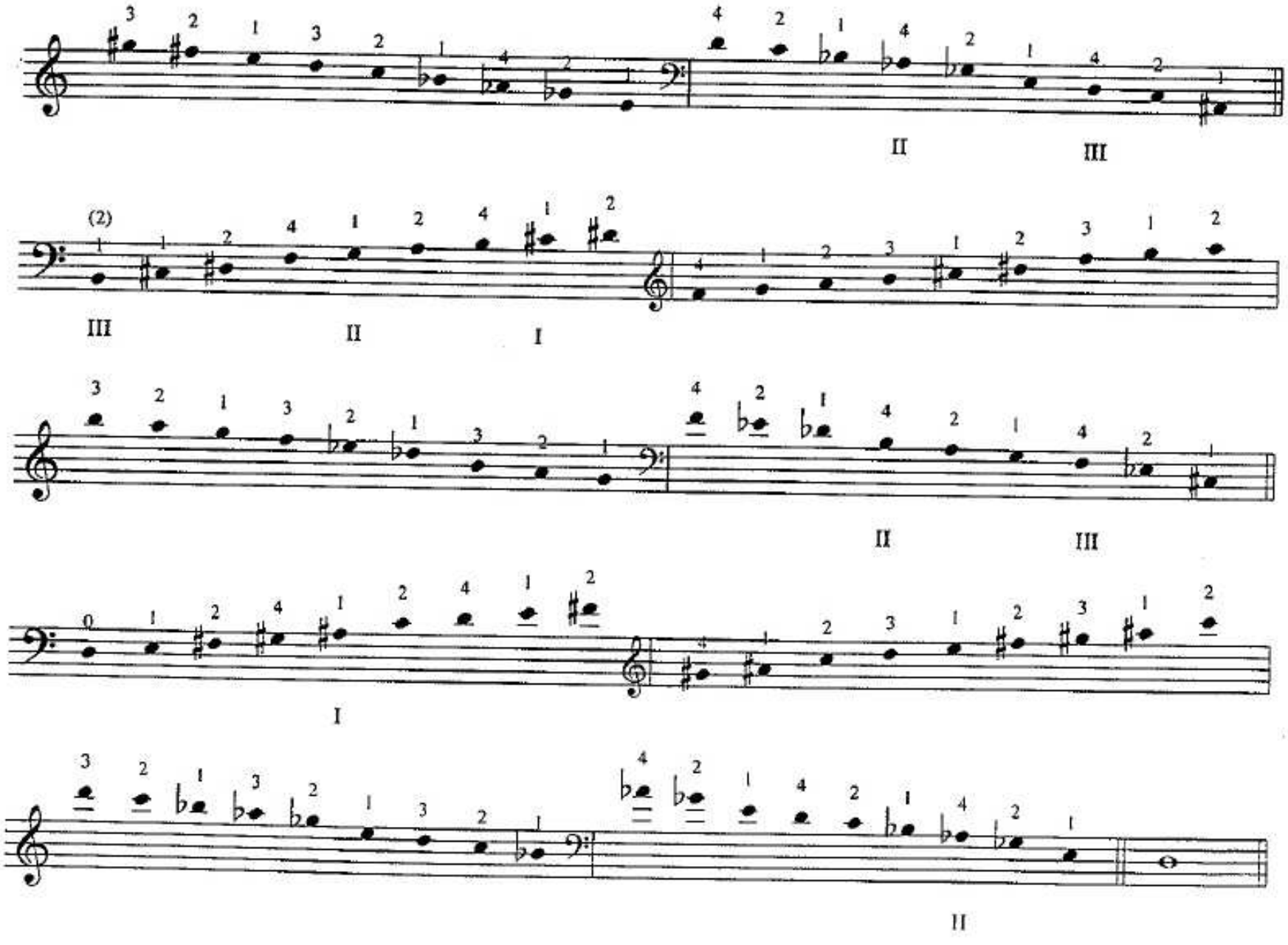
THREE-OCTAVE SCALE

Groups of nine notes. PATTERNS: ***B1, B3, B9***
R1, R3, R9

Primary Patterns:







19

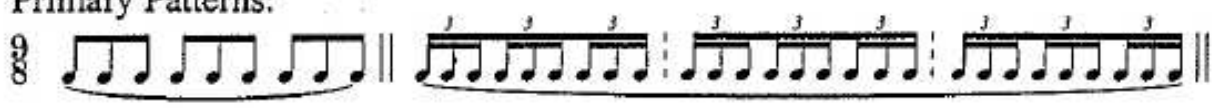
A Few Non-Traditional Scales and Arpeggios

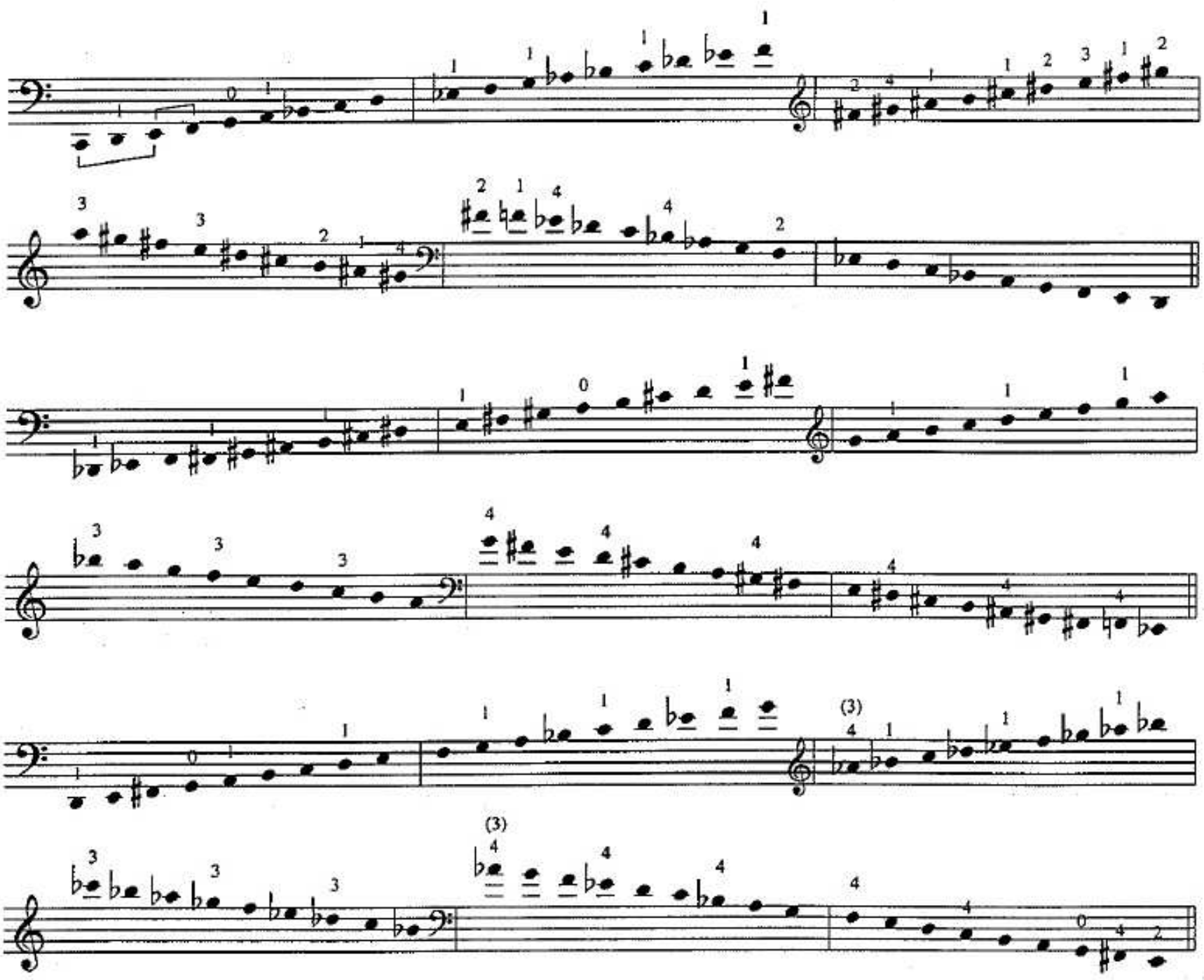
The scales and arpeggios in this section are intended as introductory study material for contemporary music. Each exercise is built from a basic interval or series of intervals indicated by the lower bracket and regularly repeated at a definite interval-distance shown by the upper bracket. The resulting non-traditional sequences provide a technical basis for an approach to present-day music. In addition this chapter is also a great tool for developing fine intonation.

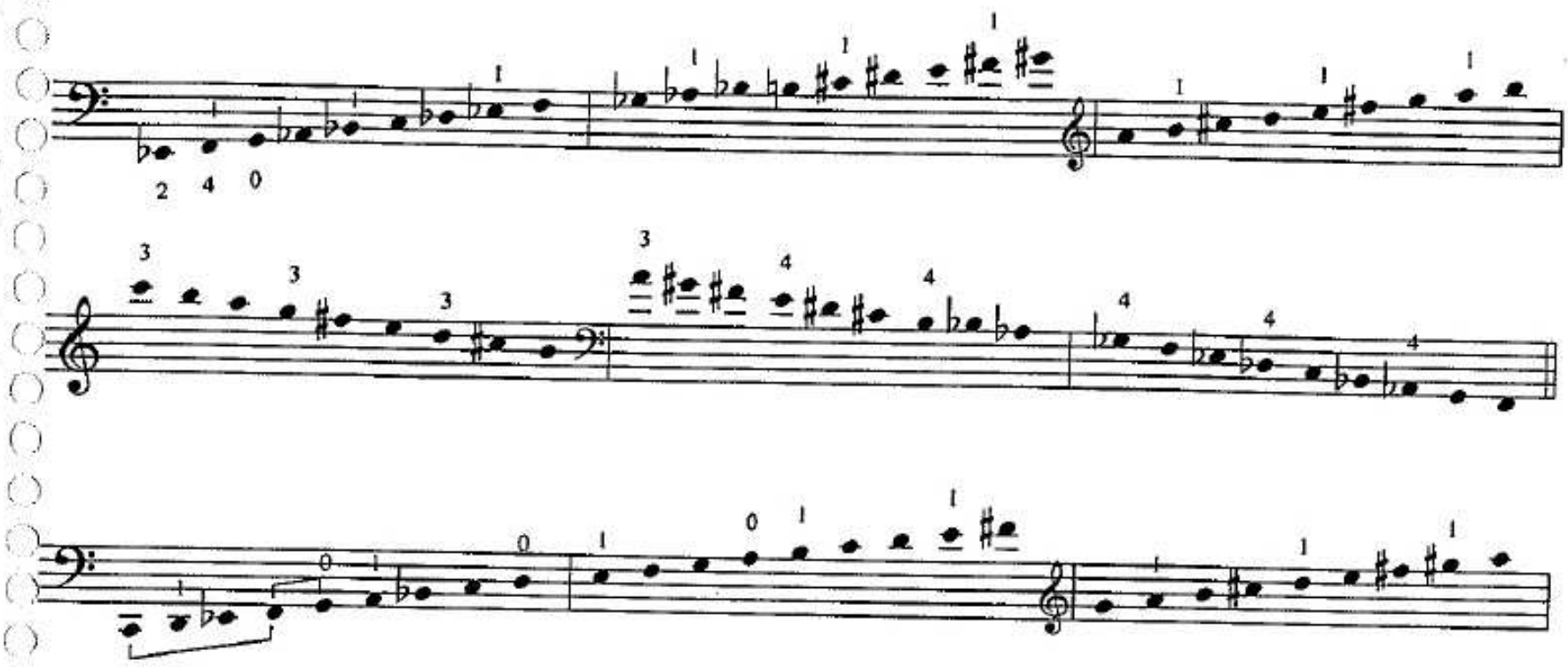
SCALES

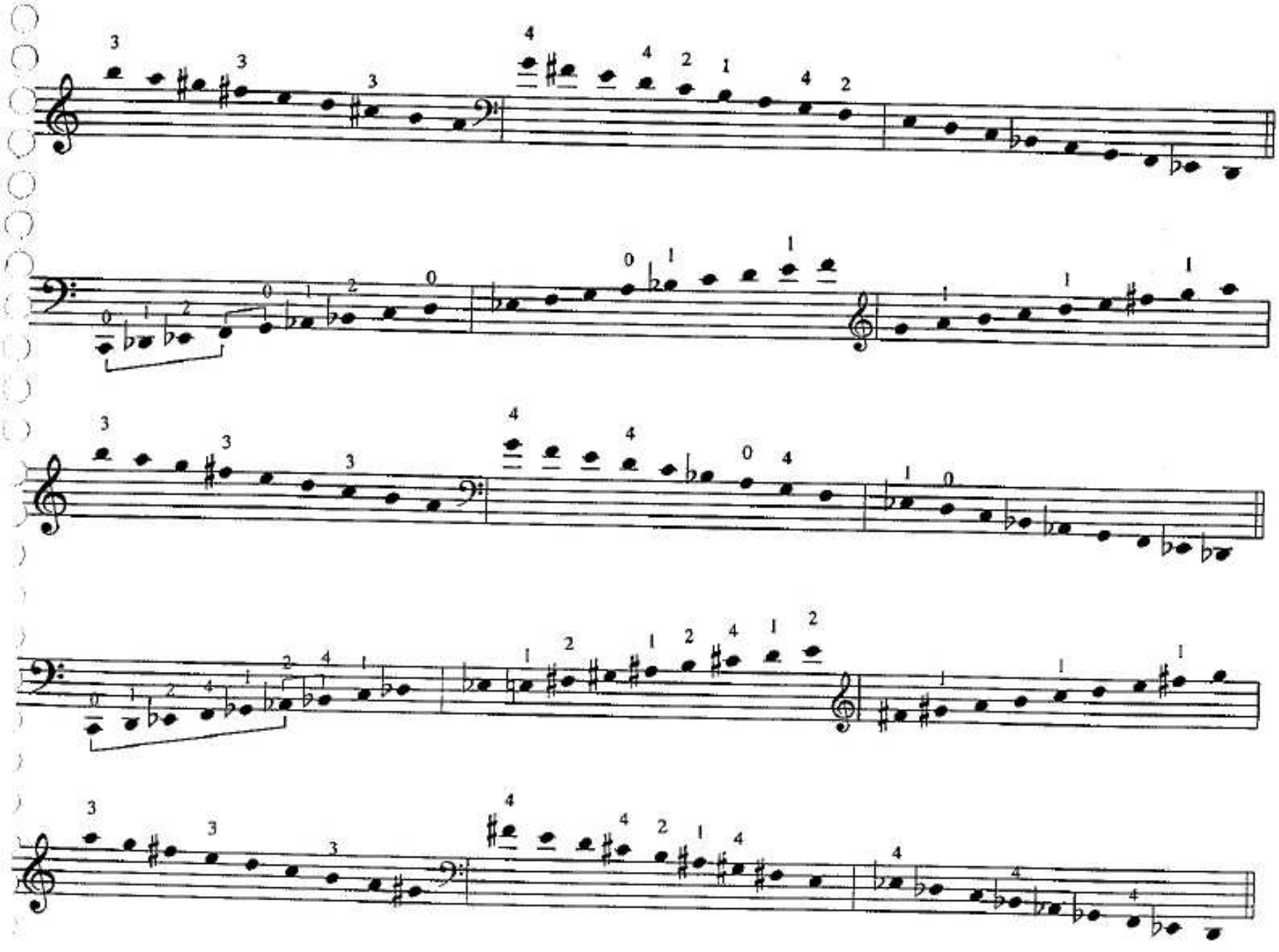
Groups of nine notes. PATTERNS: ***B1, B3, B9***
R1, R3, R9

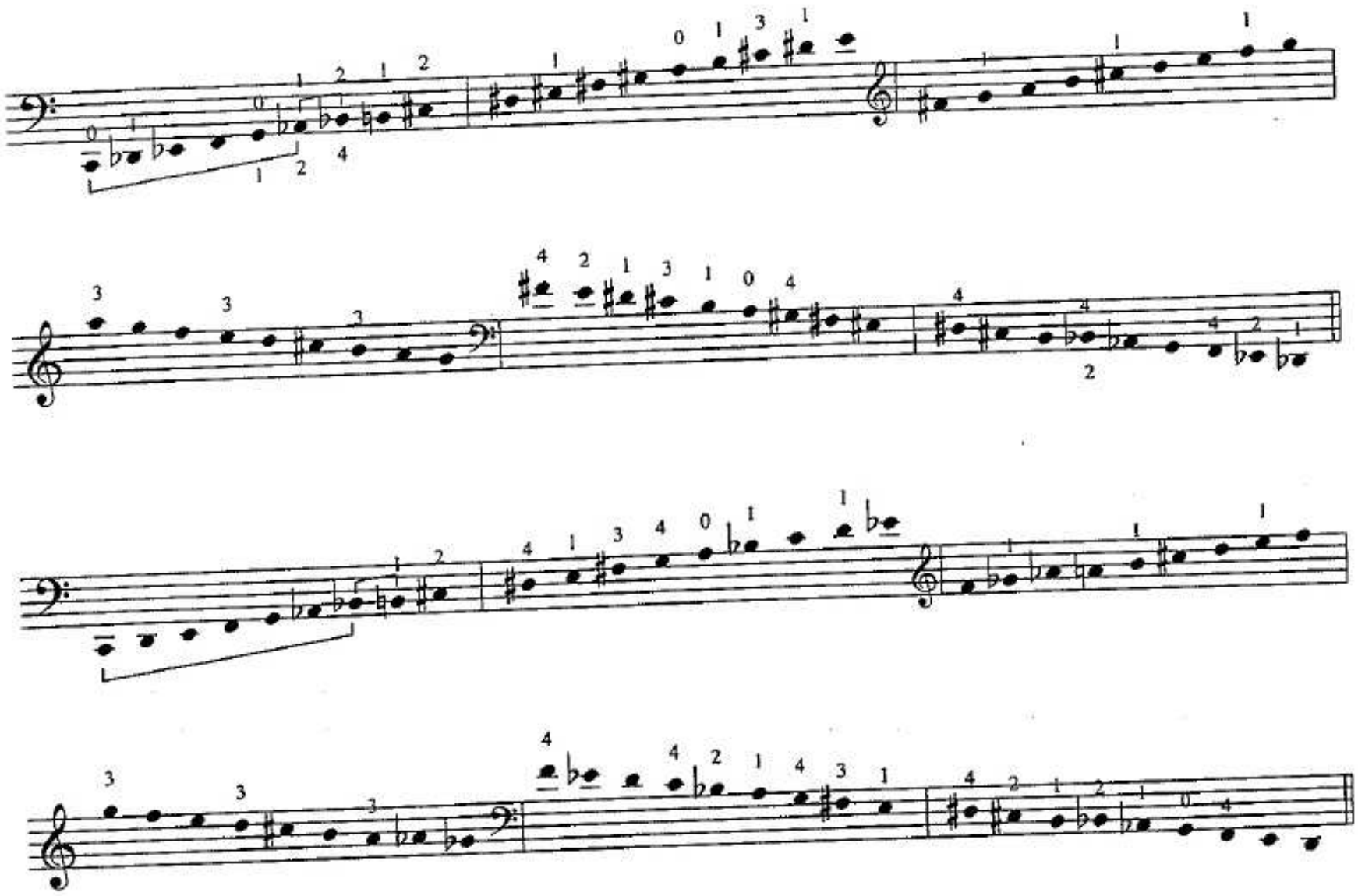
Primary Patterns:

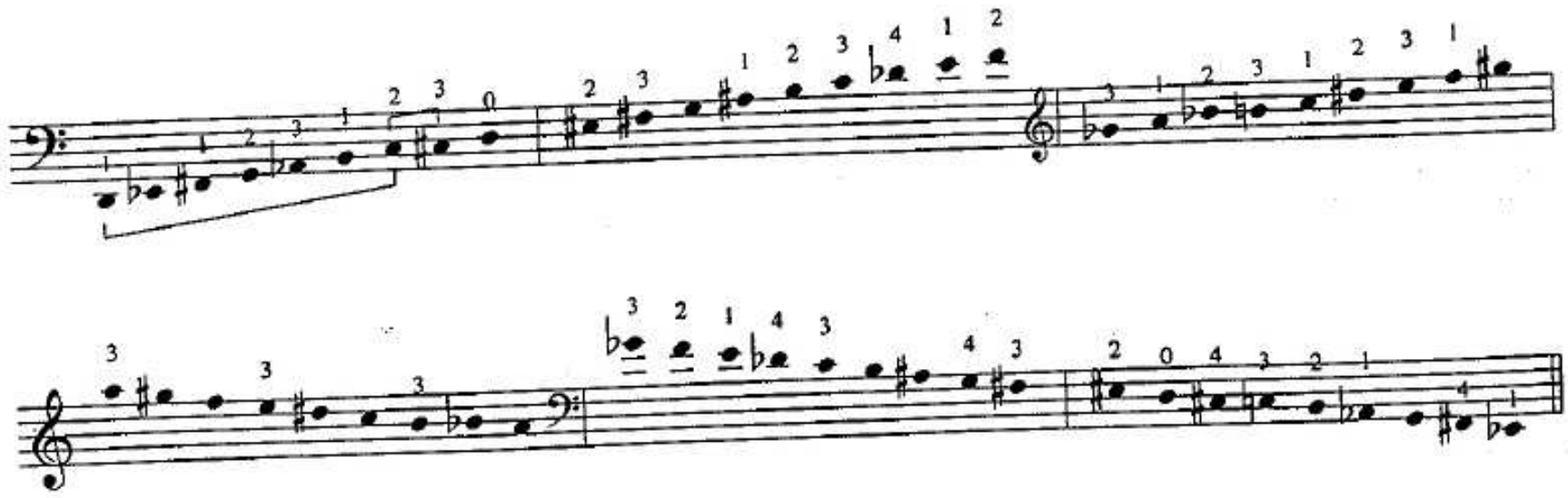








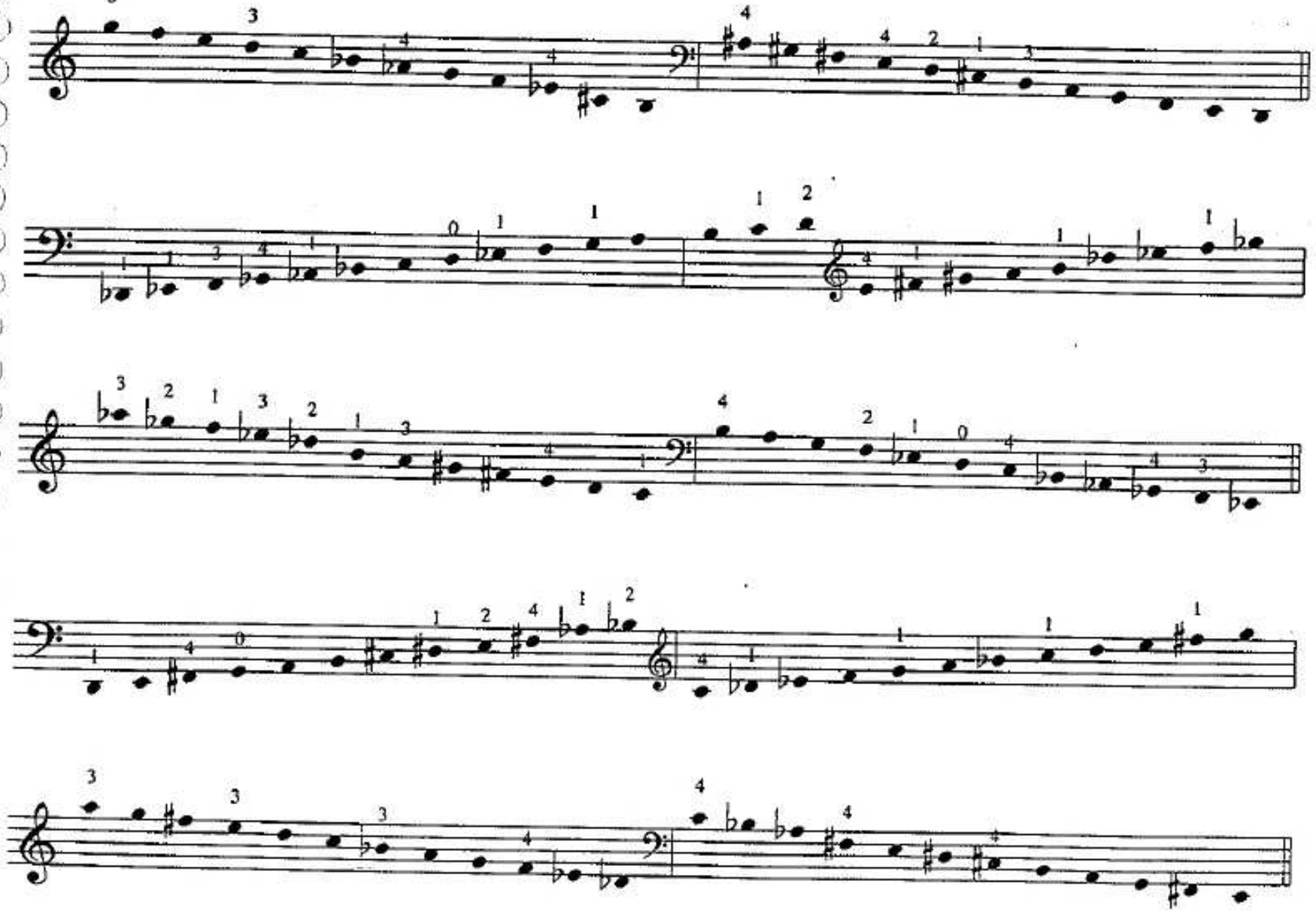


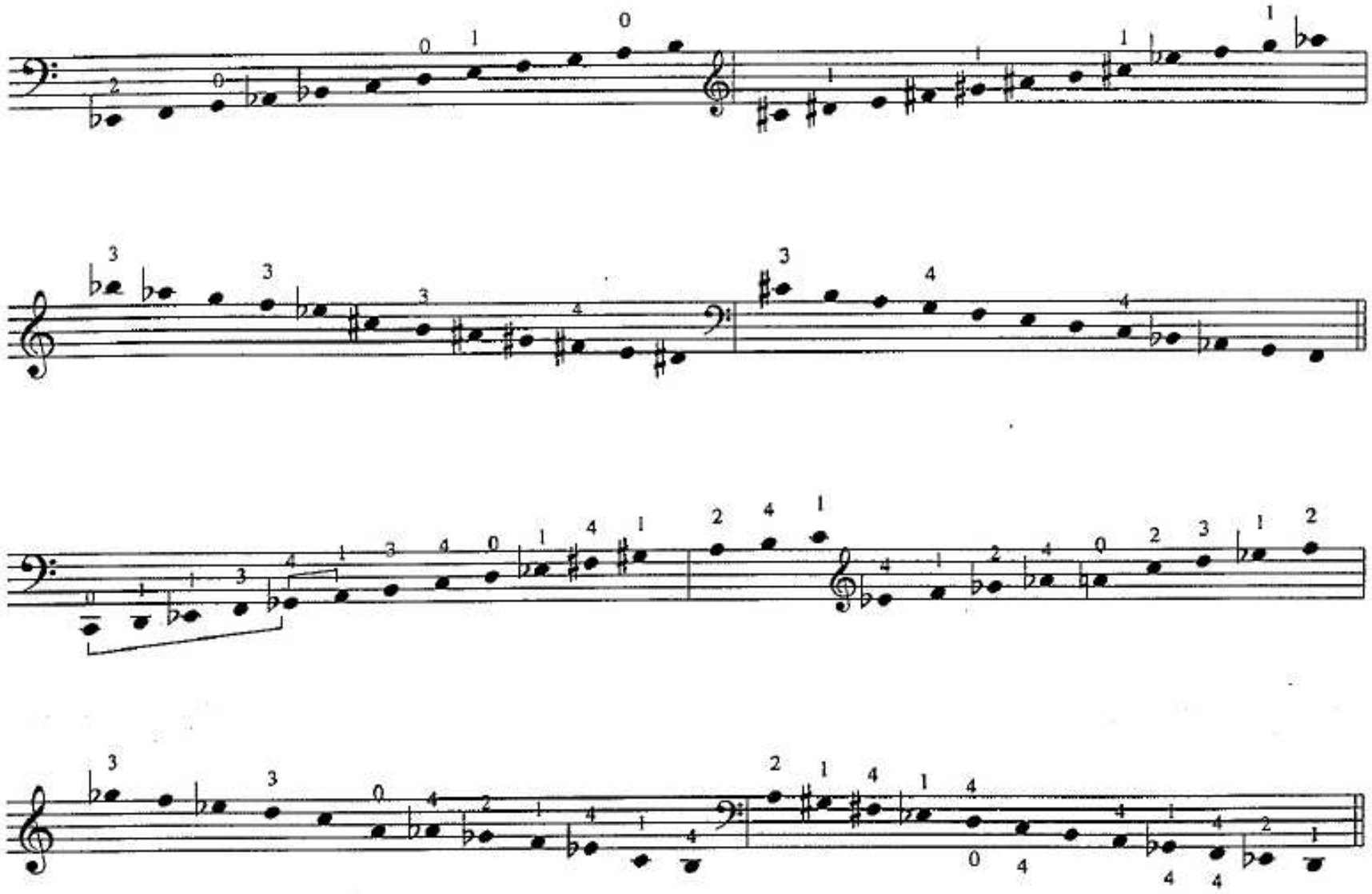


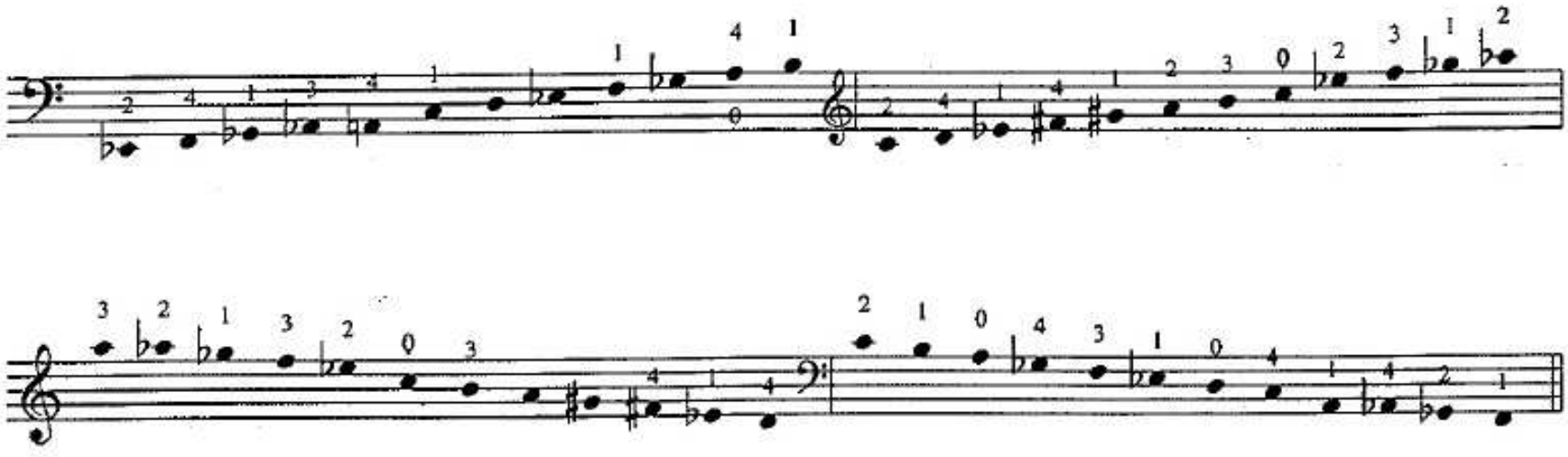
Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

Primary Patterns:

Also slur two measures.



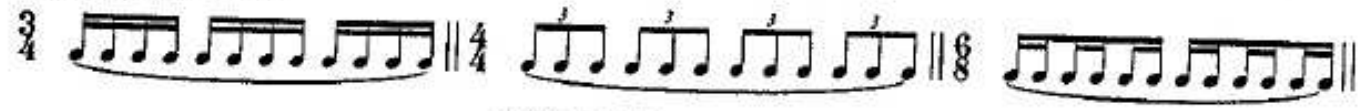




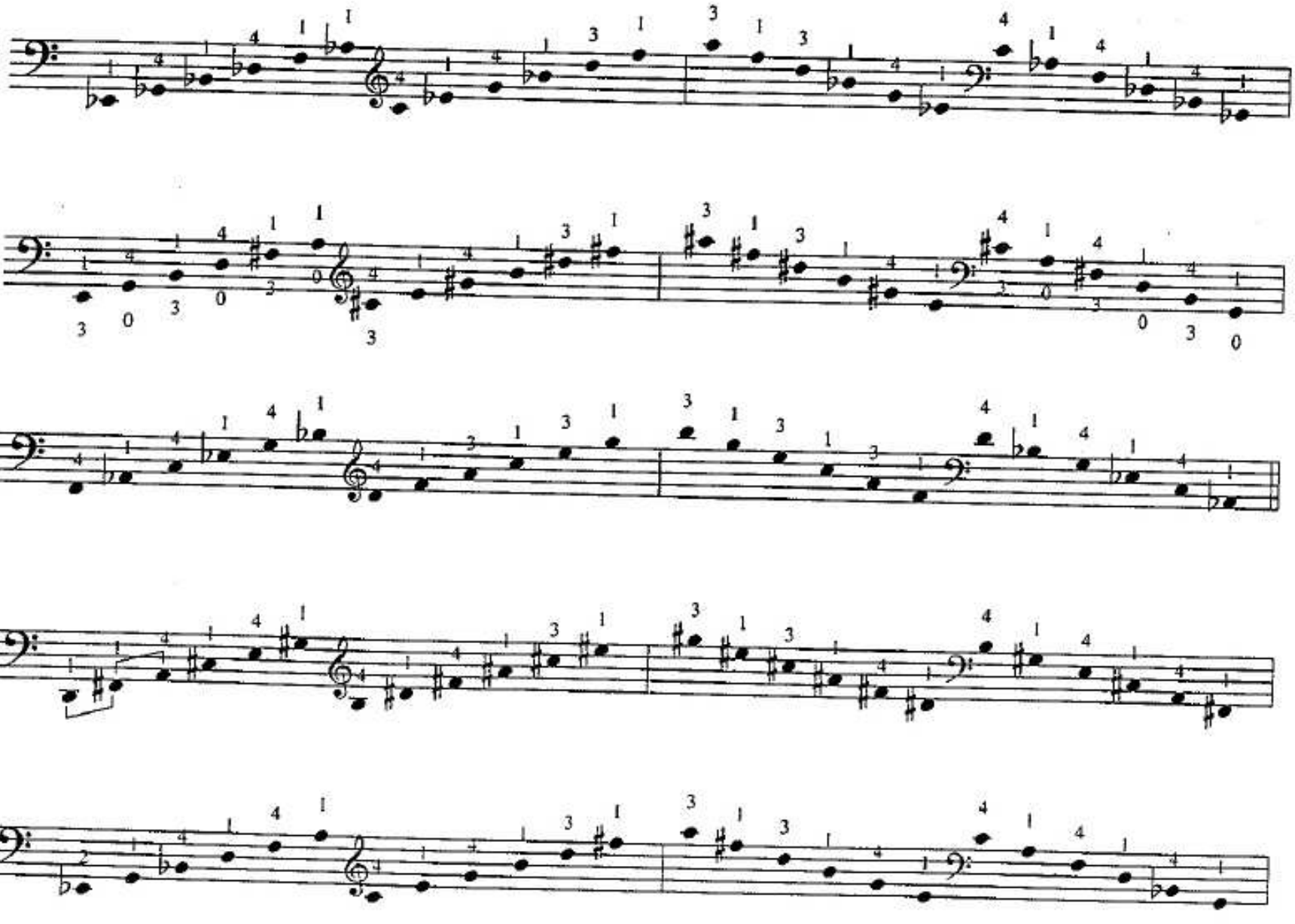
ARPEGGIOS

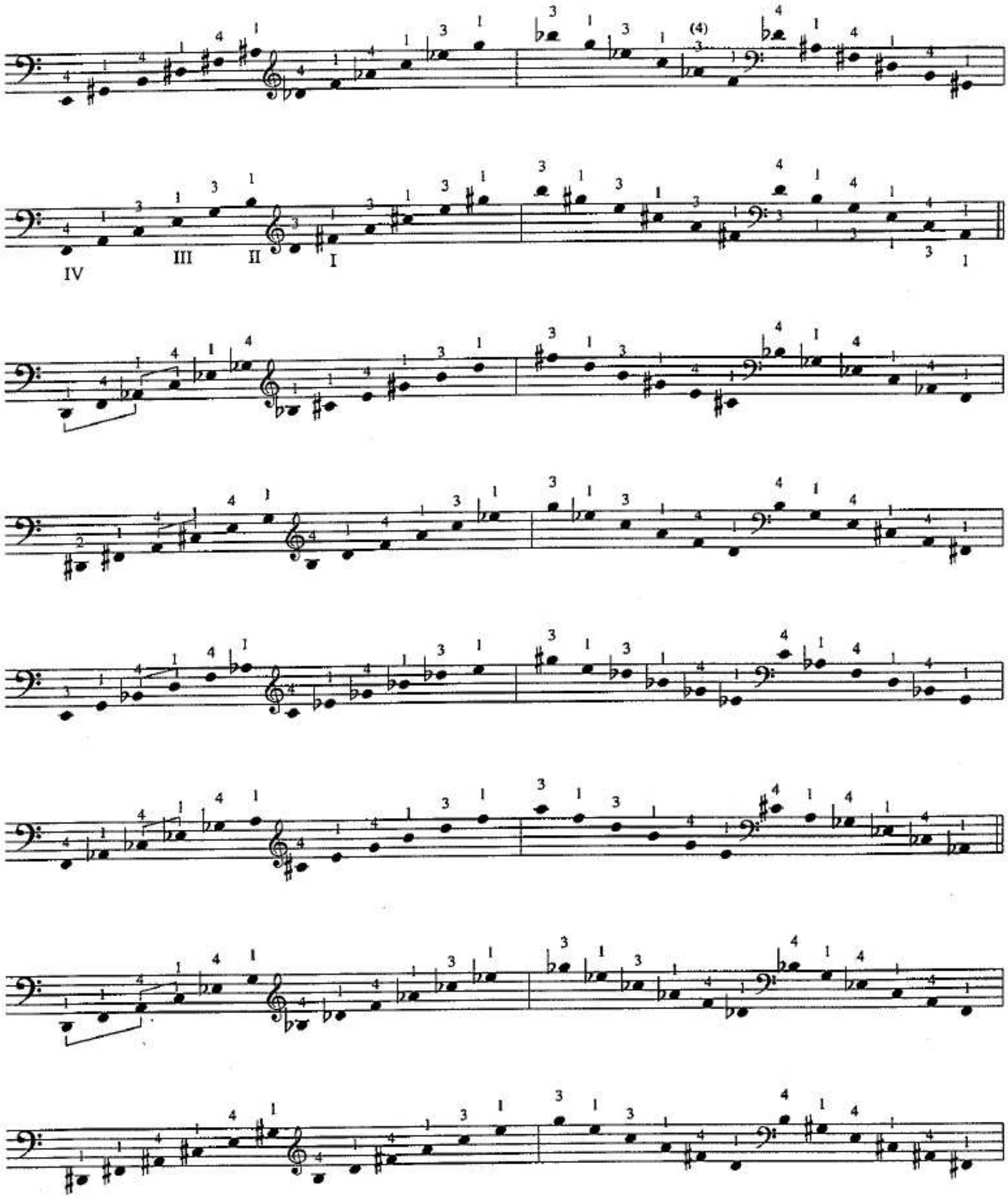
Groups of twelve notes. PATTERNS: ***B1, B2, B3, B4, B6, B12***
R1, R2, R3, R4, R6, R12

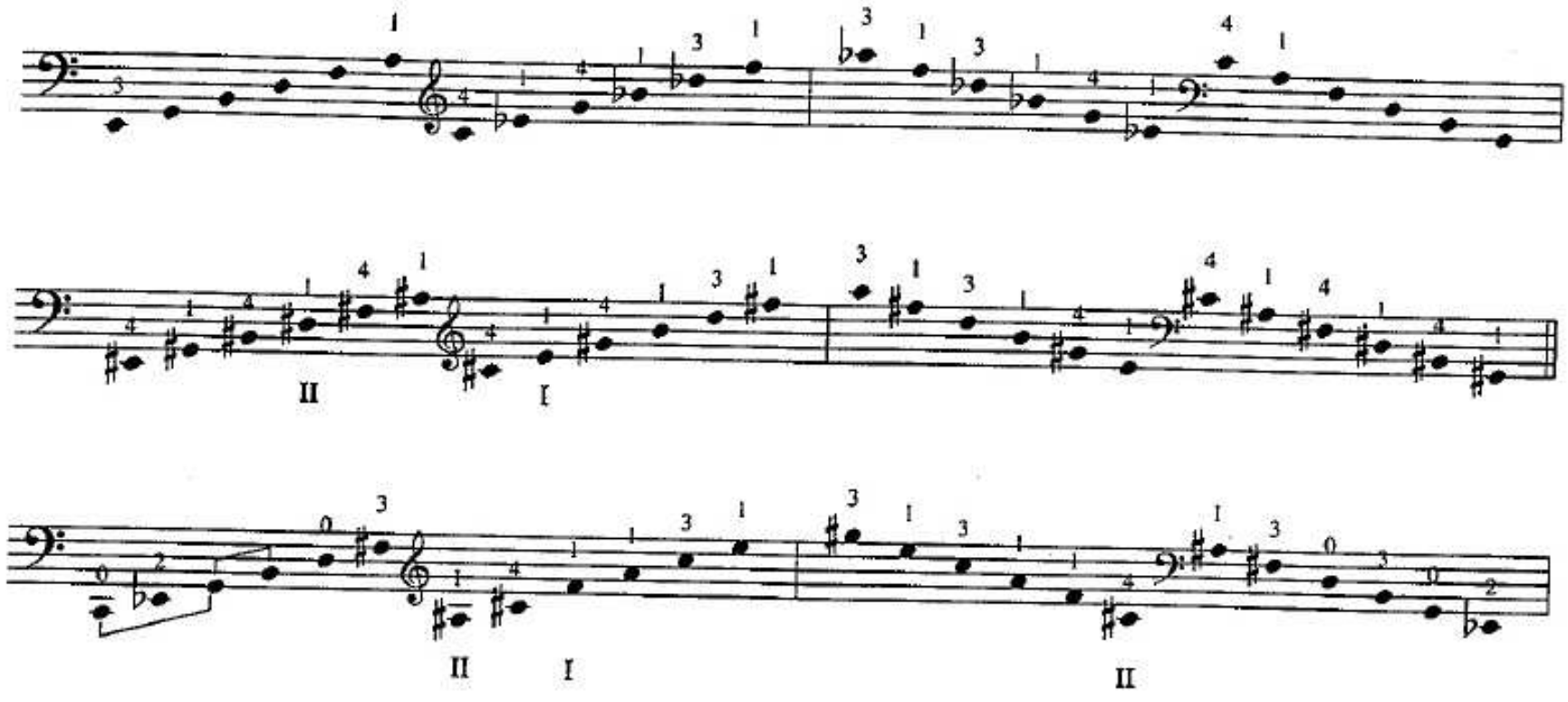
Primary Patterns:

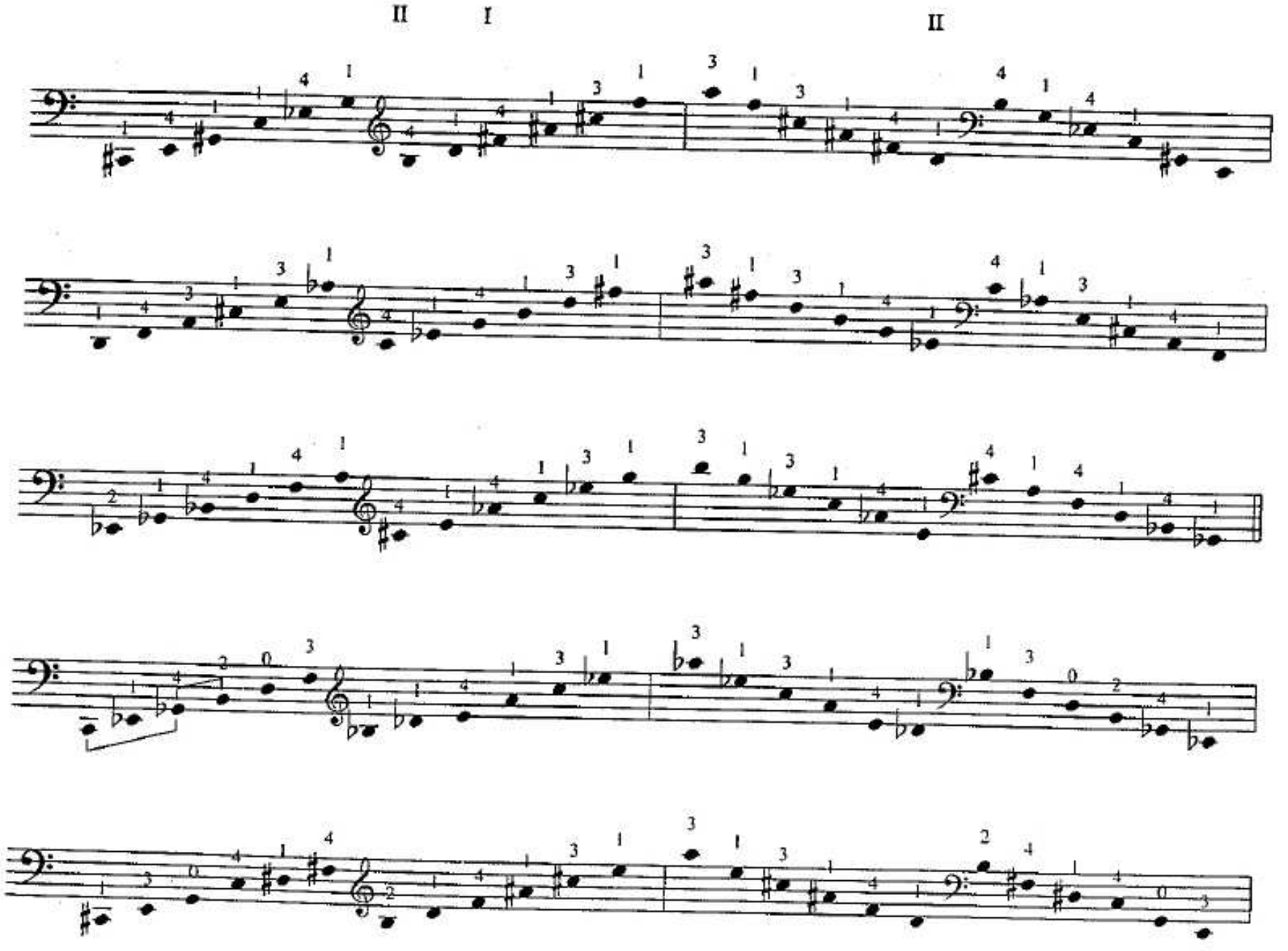


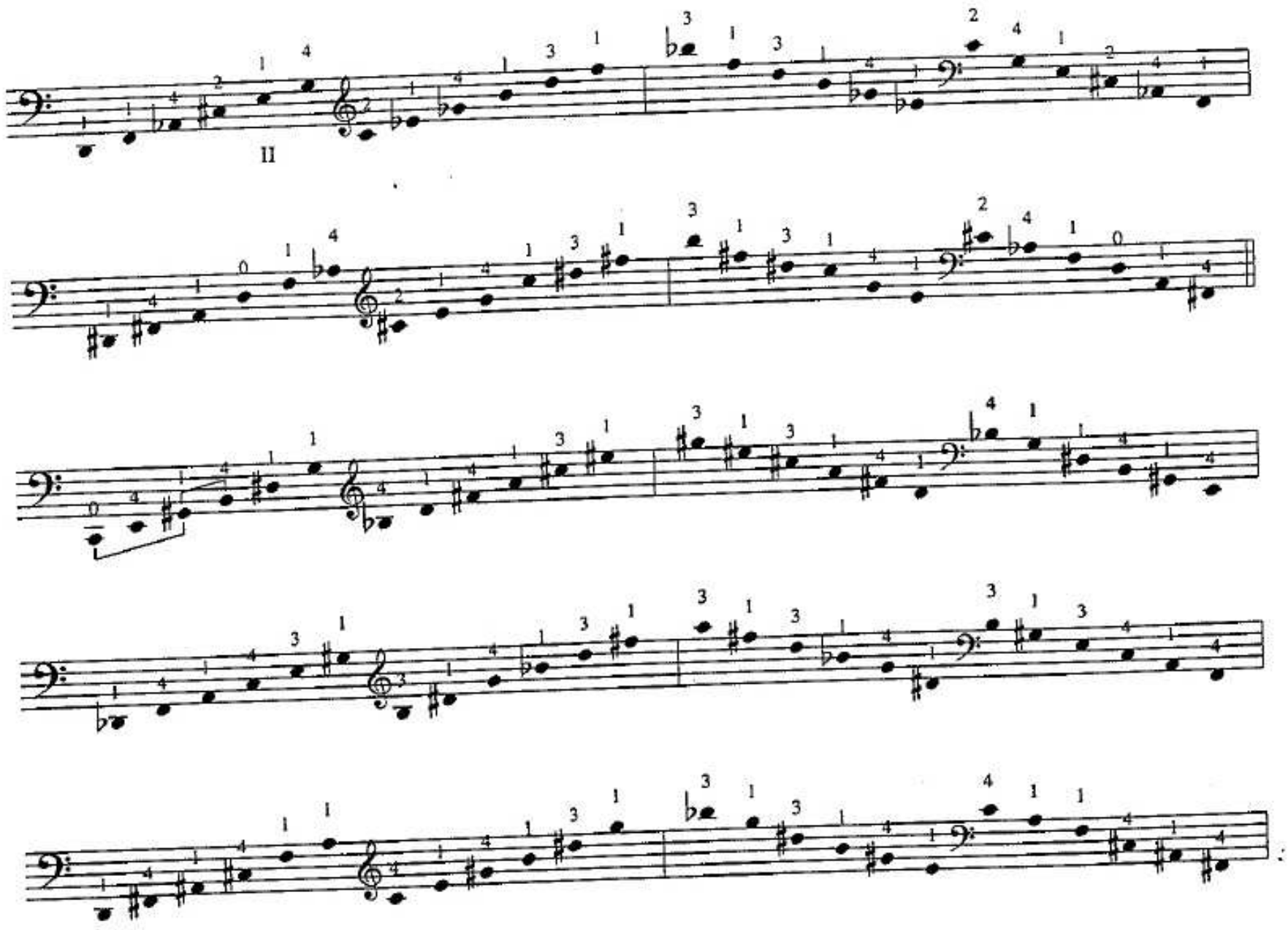
Also slur two measures.

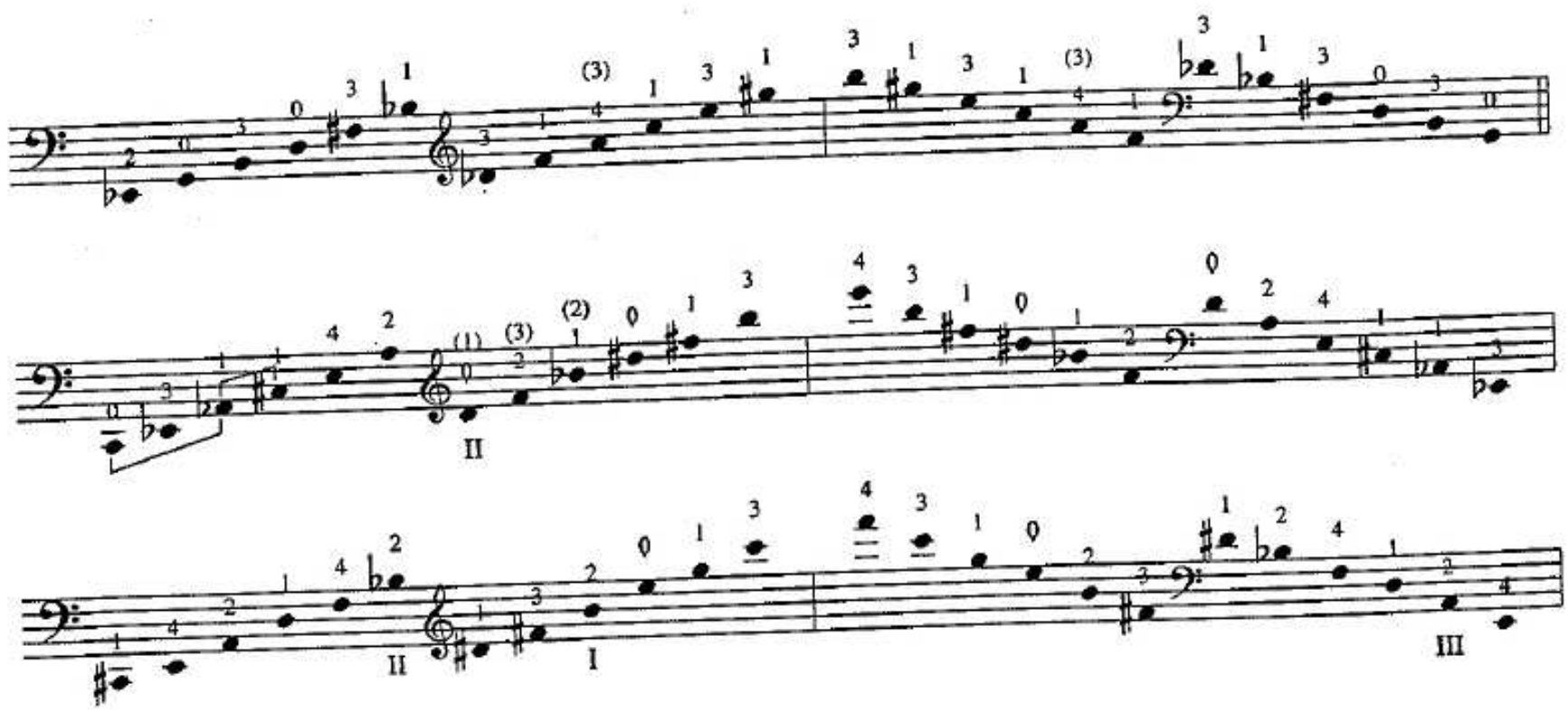


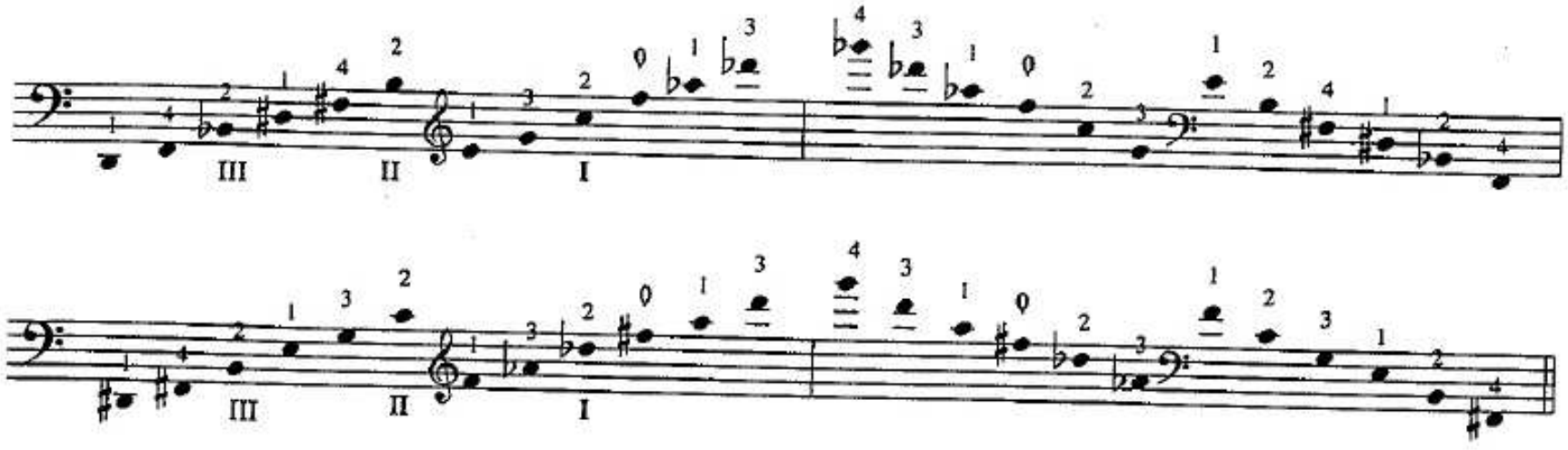

IV
III
II
I
(4)


II
I
II
I
II

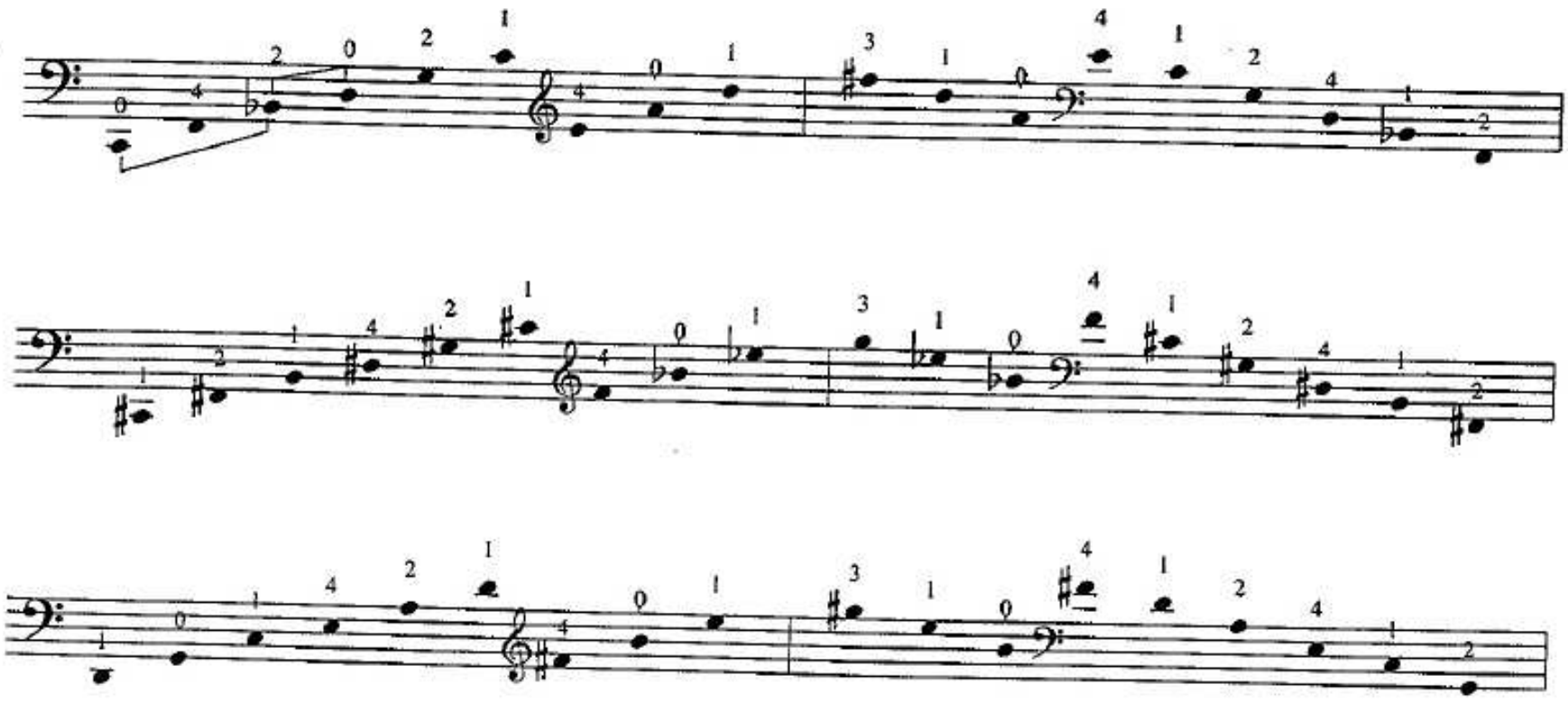



II


II
II
I
III



Groups of nine notes. PATTERNS: ***B1, B3, B9***
R1, R3, R9

Primary Patterns:

Also slur two measures.