EXERCISES

FOR

STRING QUARTET

BY

MOGENS HEIMANN

Edited by

HANS ERIK DECKERT

XII - 2007

"All that you play is part of the whole"

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MOGENS HEIMANN

Edited by

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Editor's preface

The teaching of music in the widest sense was a primary mission of the Danish violinist Mogens Heimann (1915-1982). A pupil of Carl Flesch, he drew inspiration from the research spirit of his great teacher and made his own contributions to violin pedagogy. In 1944, the music publisher Wilhelm Hansen issued Heimann's "Modern Violin Studies", a work inspired by Flesch and not as well known as it should be. These studies provide not only a unique and comprehensive survey of all intricacies of violin playing, but also a profoundly innovative school of daily practice. Heimann stressed the importance of disciplined practice with a maximum of mental concentration, requiring that the student

1) Be conscious of errors
2) Determine the cause of error
3) Eliminate error

It was in the same spirit that the "Exercises for String Quartet" were conceived. They appeared first as a private edition in Copenhagen in 1958, and then in 1995 they were published by ESTA (Denmark Branch).

Heimann realized that the studies should be supplemented by practical examples from the standard quartet literature. While the editions of 1958 and 1995 contain only a few such examples, the present revised edition provides two examples for each of its seven sections.
The "Exercises for String Quartet" form a "tool kit" for the art of chamber music playing and constitute a technique for sharpening collective perception in musical practice. Naturally, these exercises must be studied as a group project.

Each exercise is a contribution to the expressive opportunities of collective music making. The author emphasizes the importance of focusing on one type of problem at a time, and each section deals with a particular topic. The seven topics are: Intonation, Unity of Execution, Dynamic Shading, Rhythm, Phrasing, Tone Production, and Tempo. The comments associated with each exercise should be clear to any reasonably experienced quartet player with an elementary knowledge of music theory. They are based on the author's pedagogic principles and aim at a deeper understanding of their systematic application.

Note: The American terminology has been used for the time value of notes, as given in the following table. A more complete table is available at
http://www.dolmetsch.musictheory2.htm

Sign	American English	British English	French	German
	whole note	semibreve	ronde	Ganze
	half note	minim	blanche	Halbe
	quarter note	crotchet	noire	Viertel
	eighth note	quaver	croche	Achtel
	sixteenth note	semiquaver	double croche	Sechzehntel
	thirtysecond note	demisemiquaver	triple croche	Zweiunddreissigstel
	sixtyfourth note	hemidemisemi-quaver	quadruple croche	Vierundsechzigstel

1. Intonation

We present here some of the many requirements for an equalized intonation.

First part: Chordal intonation

The purpose of this part, which consists of chords with at least one open string, is to develop the faculty of "vertical listening". The intonation change from "equal tempered" tuning to "just" tuning is denoted by the signs ⇓ (lower slightly) and ⇑ (raise slightly). The 39 bars of this exercise are divided into 7 groups, separated by double lines.

Bars 1-10: The C-major triad (C,E,G), Bar 1; the G-major triad (G,B,D), Bars 2, 5-9; the D-major triad (D,F#,A), Bars 3 and 10. It is indicated who has to adapt to whom with respect to the intonation changes mentioned above.

Bars 11-14: The D-major-minor seventh chord (D,F#,A,C). This is a D-major triad to which is added a fourth tone, C, which forms a minor seventh interval with respect to the root, D, of the triad.
Bars 15-18: The G-major-major seventh chord (Bars 15 and 18); the C-major-major seventh chord (Bar 16); the D-major-major seventh chord (Bar 17). In a chord of this type, the fourth tone forms a major seventh interval with respect to the root of the major triad. For example, the D-major-major seventh chord is (D,F#,A,C#).
Bars 19-22: Shortened versions of the D-major-minor-minor ninth chord (D,F#,A,C,Eb), where either the D or A is omitted from the triad.
Bars 23-26: Shortened versions of the D-major-minor-major ninth chord (D,F#,A,C,E), where either the D or A is omitted from the triad.
Bars 27-35: The F-major triad (F,A,C), Bars 27 and 29; the D-minor triad (D,F,A), Bars 28, 30,31, 33 and 35; the G-minor triad (G,Bb,D), Bar 32; the A-major triad (A,C#,E), Bar 34.
Bars 36-39: The D-minor-minor seventh chord (D,F,A,C).

Second part: Leading notes and modulation

Bars 1-8: A comparison of two functions of the tone F#: Its harmonic function as the third (i.e., the tone forming a third interval with respect to the root tone) in the D-major triad (D,F#,A), and its melodic function as the leading tone for the tone G.
Bar 9: A sequence of triads that modulate from Eb-major via C-major, A-major, and F#-major to D-major; i.e., (Eb,G,Bb) → (C,E,G) → (A,C#,E) → (F#,A#,C#) → (D,F#,A). In the first three transitions, the third of the old triad becomes the fifth of the new. In the fourth transition, the root tone F# (played by the cello) becomes the third of the final triad.
By illustrating how tone color changes with tonality, this exercise anticipates the problem of tone production treated in Section 6.
Bars 10-16: This passage begins with a sequence of scale segments, played in unison, that modulate from A-major (Bar 10), to F-major (Bars 11 and 12), and then to Db-major (Bar 13). In Bars 14-16, a unison tone Db is followed by triads alternating between Db major and A major. Note the shifts in the cello part between the enharmonically equivalent Db in the Db-major triads and C# in the A-major triads.
Bars 17-20: Repeated modulations from the G-major triad to the Eb-major triad, in which each instrument takes its turn as the leading voice.

Examples:

1a) F. Mendelssohn-Bartholdy: String Quartet E-flat Major, Op. 44:3, 4th movement (Bars 36-44).
Unison interval intonation.
1b) F. Mendelssohn-Bartholdy: String Quartet E-flat Major, Op. 44:3, 1st movement (Bars 79-85).
Intonation by combining a sense of interval with a sense of harmonic structure within a B-flat scale.

2) L. v, Beethoven: String Quartet B-flat Major, Op. 18:6, introduction to 4th movement ("La Malinconia").
Intonation by modulation. This example runs through the 12 minor keys of the fifths circle: E minor, B minor, F-sharp minor, C-sharp minor, A-flat minor, E-flat minor, B-flat minor, F minor, C minor (Bars 21-29), and G minor, D minor, A minor (Bars 33-35).

2. Unity of execution

This section is about synchronized rhythmic precision.

Bars 1-4: Before playing, note the precise beginning and end of the typical tone. This exercise is to be executed both with the bowings shown and with the reverse bowings.
Bars 5-7: The half notes in the upper three voices are connected by a variety of legato slurs. The shifting pattern of these must not be allowed to disturb the combined rhythm.
Bars 8-14: Here there are ascending and descending D major scales in thirds, sixths and tenths, divided between two groups that play alternately. As the exercise proceeds, the composition of the groups changes and the scale segments become shorter. The goal of this exercise is to create the experience of one continuous scale in two voices. The *tenuto* strokes are meant to assure that there are no interruptions in the switches between the two groups.
Bars 15-18: This exercise requires that the individual rhythms be combined to form a continuous flow of sixteenth notes.

Examples:

1) J. Brahms: String Quartet A Minor, Op. 51:2, 4th movement (Bars 293-300).
Continuous eighth notes between 1st violin and viola (Bars 1-8), and between 2nd violin and cello (Bars 9-11). (This example was included in M. Heimann's first version of these studies. He made minor modifications of the score for pedagogic purposes.)

2) L.v. Beethoven: String Quartet F Major, Op. 59:1, 4th movement (Bars 73-99).
Continuous sixteenth notes between the two upper voices and the two lower voices (Bars 73-88), and in the subsequent unison passage with syncopated legato slurs (Bars 89-95).

3. Dynamic shading

The exercises in this section deal with a broad selection of modes of dynamic expression.

Bars 1-14: These exercises are concerned with "terrace dynamics", where changes of loudness are *subito* effects. They begin at a medium dynamic level and then lead to extreme dynamics (Bars 1-4 and 5-8) or continue at a medium level (Bars 9-16 and 13-14).
Bars 15-26: Here the focus is on coordinated crescendo and diminuendo, first between easily discernable dynamic levels (Bars 15-18), then between more similar but still clearly discernable levels (Bars 19-22), and finally between almost identical levels (Bars 23-26).
Bars 27-34: In this exercise, diminuendo and crescendo are enriched by greater rhythmic complexity. The dynamic instructions are given in detail. Attention is required to avoid premature changes of dynamics.
Bars 35-36: Here, a *molto crescendo* is immediately followed by a *subito piano*. Note how playing the crescendo with a down bow facilitates the *subito piano*.
Bars 37-40: This exercise, with its detailed bowing indications, focuses on a variety of accents.

Bars 41-44: The special feature of this exercise is that different dynamics are distributed across the four voices.
Bars 45-48: This exercise concerns the coordination of dynamics and vibrato, first with a simultaneous increase and decrease of both functions, and then with opposite changes.

Examples:

1) L.v. Beethoven: String Quartet F Major, Op. 18:1, 3rd movement (Bars 37-85).
Terrace dynamics, accents at different levels of loudness, crescendo.

2) F. Schubert: String Quartet D Minor, D 810, 2nd movement (Bars 121-128).
Initial pianissimo, then crescendo extending across 3½ bars up to fortissimo.

4. Rhythm

Bars 1-5: This exercise is concerned with the possible influence of contrasting note values on rhythmic stability: for example, the danger of too-slow quarter notes following a whole note, or of too-fast eighth notes following a half note. Thus the comments "seems *più mosso*" (seems more rapid), and "seems *meno mosso*" (seems less rapid) have been inserted as a precaution.
Bars 6-9: This exercise aims at the precise execution of some of the rhythms that arise when a quarter note beat is partitioned into a sequence of shorter notes. The dotted rhythm in Bar 1, for example, must not be allowed to degenerate into the triplet-based rhythm in Bar 2.
Bars 10-19: Here, an A Major scale, melodically and harmonically in thirds, is played alternately by two groups. The ascending part (Bars 10-15) consists of 30 sixteenth notes, which can be viewed as 10 groups of 3 notes each. The descending part (Bars 16-19) consists of 28 sixteenth notes, which can be viewed as 7 groups of 4 notes each. The challenge of this exercise is to achieve rhythmic stability by building these decompositions into the two parts of the scale.
Bars 20-35: The four exercises here concern "polyrhythm", the simultaneous sounding of two or more independent rhythms. Here there are two rhythms, the two upper voices providing one and the two lower voices the other. In Bars 21 and 27 there are 3 beats against 2, while in Bars 23 and 25 there are 2 beats against 3. Similarly, in Bars 29 and 35 there are 3 beats against 4, while in Bars 31 and 33 there are 4 beats against 3.The basic rhythm of the polyrhythm structure is given by the first bar of each exercise.

Examples:

1) A. Dvořák: String Quartet C Major, Op. 61, 2nd movement (Bars 1-14).
Polyrhythm, dotted rhythms

2 L.v. Beethoven: String Quartet B-flat Major, Op. 18:6, 2nd movement (Bars 57-60).
Partitioning

5. Phrasing

These two exercises concern some basic bowing strokes.

Bars 1-12: A three times descending and ascending Bb-major scale is used to demonstrate a range of bowing strokes, from slurred and *legato* strokes (continuous transitions from note to note) to *staccato* and *martellato* strokes (the most interrupted transitions).
Bars 13-16: This exercise illustrates the *portato* stroke.

Examples:

1) F. Schubert: String Quartet A Minor, Op. 29, D 703, 4th movement (Bars 1-26).
Legato, staccato, accents.
2) A. Borodin: String Quartet Nr, 2, D Major, 3rd movement (Notturno) (Bars 111-133).
Portato, legato, accents.

6. Tone production

Bars 1-7: This exercise concerns the function of the left hand in a pizzicato passage, where the violins play *fortissimo* while the viola and cello play *forte* and *mezzo-forte*, respectively. In Bars 1-4 there is a sequence of triads in Bb major, G minor, Eb major, C minor, Ab major, F minor, Db major, culminating in, surprisingly, not the expected Bb-minor triad (Bb,Db,F) but the chord (B,Db,F,G). The rhythmic demands in pizzicato playing are emphasized in Bars 5-7, where a C major scale is divided into sixteenth-note and sextuplet passages and is complicated by countermovements and tonal clustering.
Bars 8-11: This exercise is concerned with the influence on tone production of the contact point of the bow with the strings in the playing of double stops. As the exercise proceeds, the contact point is to be moved gradually from the end of the fingerboard to the bridge. (See diagram.)
Bars 12-18: This exercise investigates much more deeply the effect of the contact point of the bow by simultaneously taking into account the effect of loudness. Each bar is concerned with the tone produced by a specific contact point and a specific dynamic level. A descriptive name is given for each tonal quality, or "sound color", considered. For example, the sound color produced by playing *mezzo-forte* with the contact point at the bridge is called *ponticello*. If the contact point is moved slightly away from the bridge and the dynamic level is reduced to *mezzo-piano*, then the sound color is termed "oboe".

Examples:

1) L.v. Beethoven: String Quartet A Minor, Op. 132, 3rd movement (Heiliger Dankgesang), Bars 168-182.
Sound colors. This example was included in the original edition of these studies. Mogens Heimann has indicated the different colors (flute timbre, oboe timbre, naturale= clarinet timbre)

2) A. Webern: 5 Movements for String Quartet, Op. 5, 2nd movement
Sound colors in the lowest degrees of loudness, contingent on melodic, rhythmic and harmonic elements

7. Tempo

Bars 1-4: This exercise aims at developing stability of an initially chosen tempo. To begin, set the metronome to tempo "60 for a quarter note" and play the exercise following the given instructions. Then, *without* using the metronome, repeat the exercise with the five other tempi listed. These new tempi should be derived from the initial one as follows: One beat of the original tempo, when perceived as four sixteenth notes, yields "240 for a sexteenth note". Two beats in that tempo yield metronome beat "120 for a quarter note", three yield 80, six yield 40, and five yield 48. (Note that to determine a new tempo, it is first necessary to reconstruct metronome beat 240 from the previous tempo.) . Finally, a doubling of metronome beat 48 yields 96. After playing the exercise in this tempo, use the metronome to check the accuracy of the beat.

Examples:

1) L.v. Beethoven: String Quartet Op. 59:3, 4th movement: Tempo giusto (Bars 210-258).
The half notes relate to the eighth notes, which are responsible for stabilizing the tempo. This example was included in the original edition of these studies. Mogens Heimann has provided a concluding bar.

2) J. Haydn: String Quartet Op. 64:5, Hob. III:63, (Lark Quartet), 4th movement: Tempo giusto (Bars 21-83).
The fugue theme, along with all other eighth, quarter, and half notes, relate to the sixteenth notes, which are responsible for stabilizing the tempo.

In the context of the Beethoven example, Mogens Heimann added the following general remark:
In soloistic passages, the accompanying instruments should assume a "tempo responsibility": Slow movements require vitalization of the tempo, so that the soloist has optimal opportunity for cantabile expression. Fast movements, on the other hand, require restraint of the tempo, so that the soloist can resist the temptation to speed.

Postscript

Groups that use these exercises should be creative in so doing. Indeed, an initial effort is often required simply to become receptive to their objectives. Fortunately, there are a great variety of suitable preparatory exercises. Some examples: The intonation studies of Section 1 can be preceded by the very slow unison (and *mezzo-piano*) execution of scales. The scale exercises of Section 2 can initially be carried out much more slowly than indicated and without the prescribed legato bowings. In Section 3 one can focus initially on intonation and consider dynamics later. As a preliminary exercise for Section 4 one can work on Bars 6-9 with a continuous flow of eighth notes, triplets, sixteenth notes, sextuples, and thirtysecond notes, all at a slow tempo. In Section 5 one can initially focus on the intonation of Bars 1-4. The pizzicato exercise in Section 6 should initially be played *arco* in order to train awareness of the harmonic and melodic basis. In Section 7 one can replace the first two bars by an opening G Major chord like the one at the end of Bar 4. One can also use the metronome to determine each tempo.

In most cases, also the examples drawn from the quartet literature require thorough preparatory work.

Mogens Heimann emphasized strongly the subordinate role of the technical aspects of the interpretation of music. The development of a group's collective perception and capability requires far more than the mastery of the elements treated in these exercises; it requires also the constant awareness of inexplicable phenomena in music. Nevertheless, it is to be hoped that these exercises will yield guidelines also to the mental dimension of the perception and performance of music.

Editor's acknowledgement

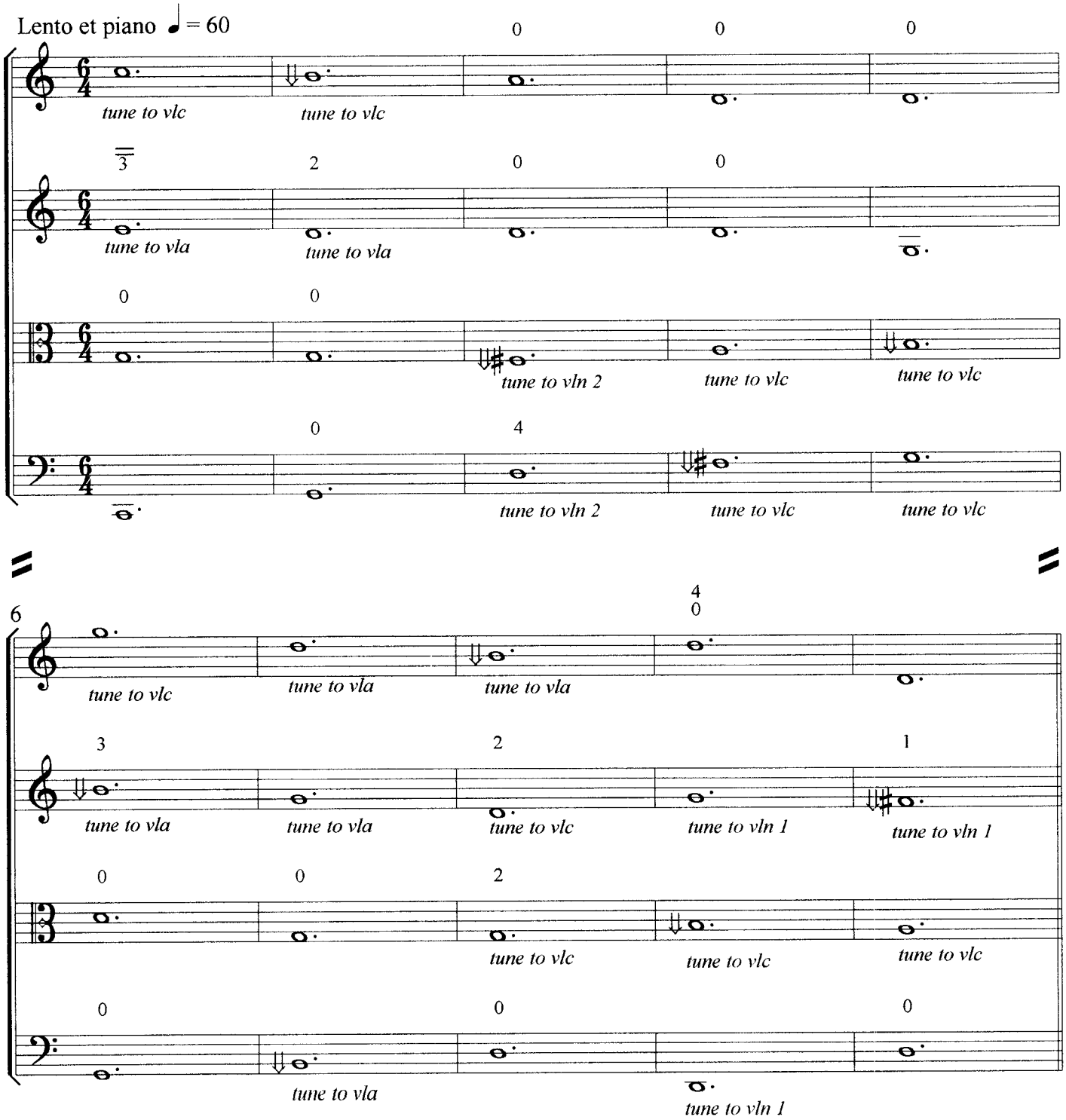
Professor Eberhard Feltz (Hanns-Eisler-Hochschule, Berlin) has provided invaluable support in the process of editing the studies, and I wish to express my great indebtedness.

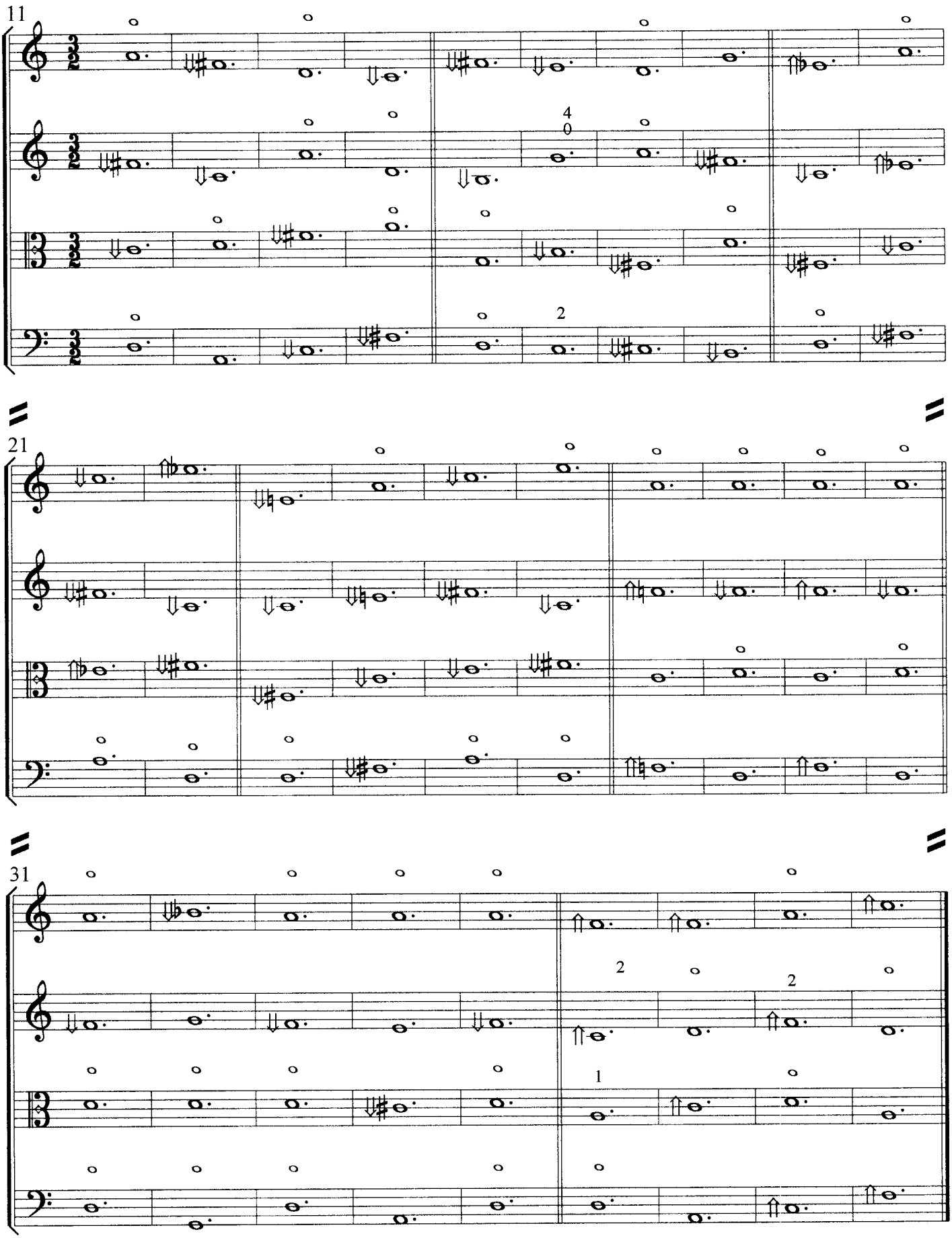
Hans Erik Deckert

Exercices for String Quartet

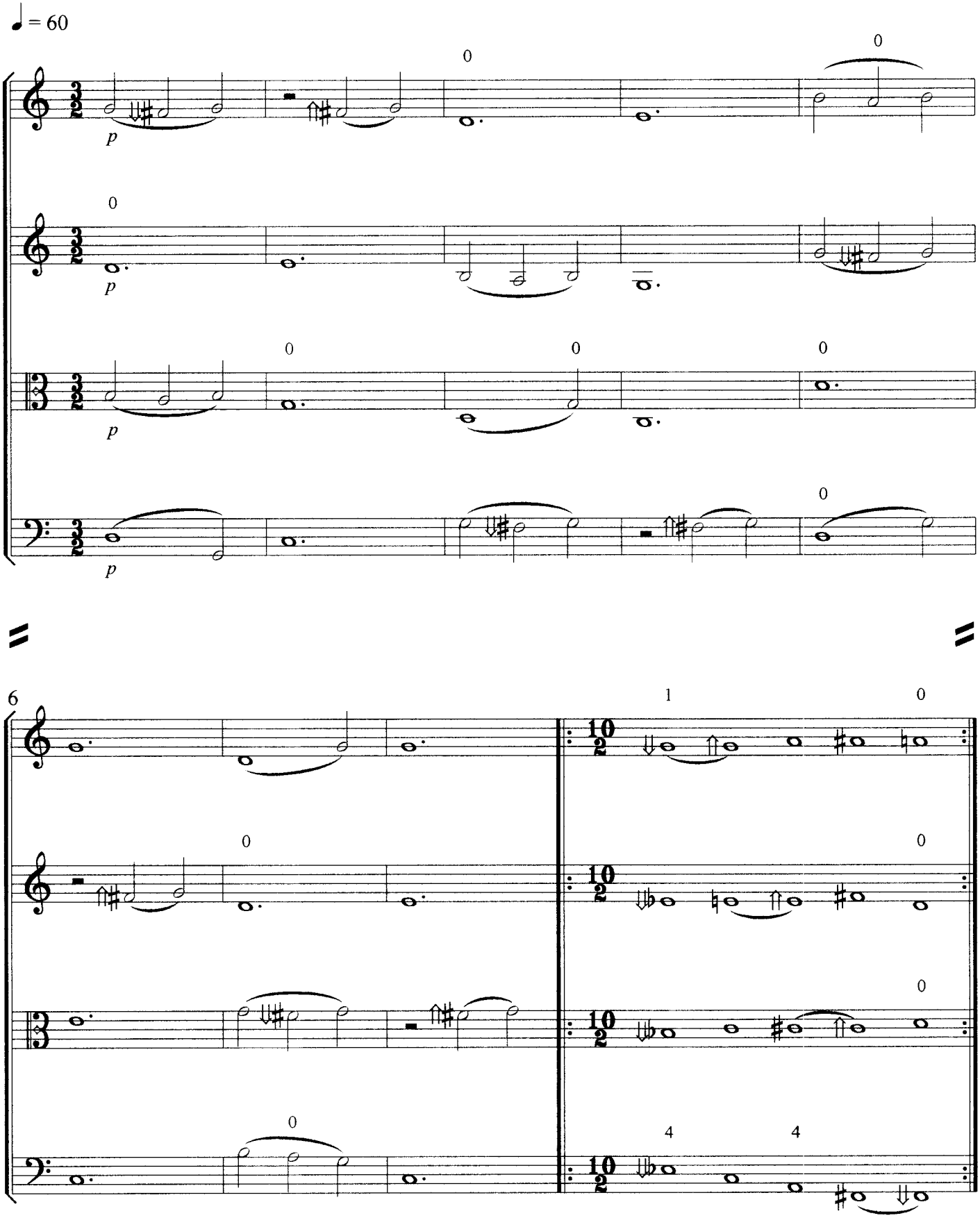
1. Intonation

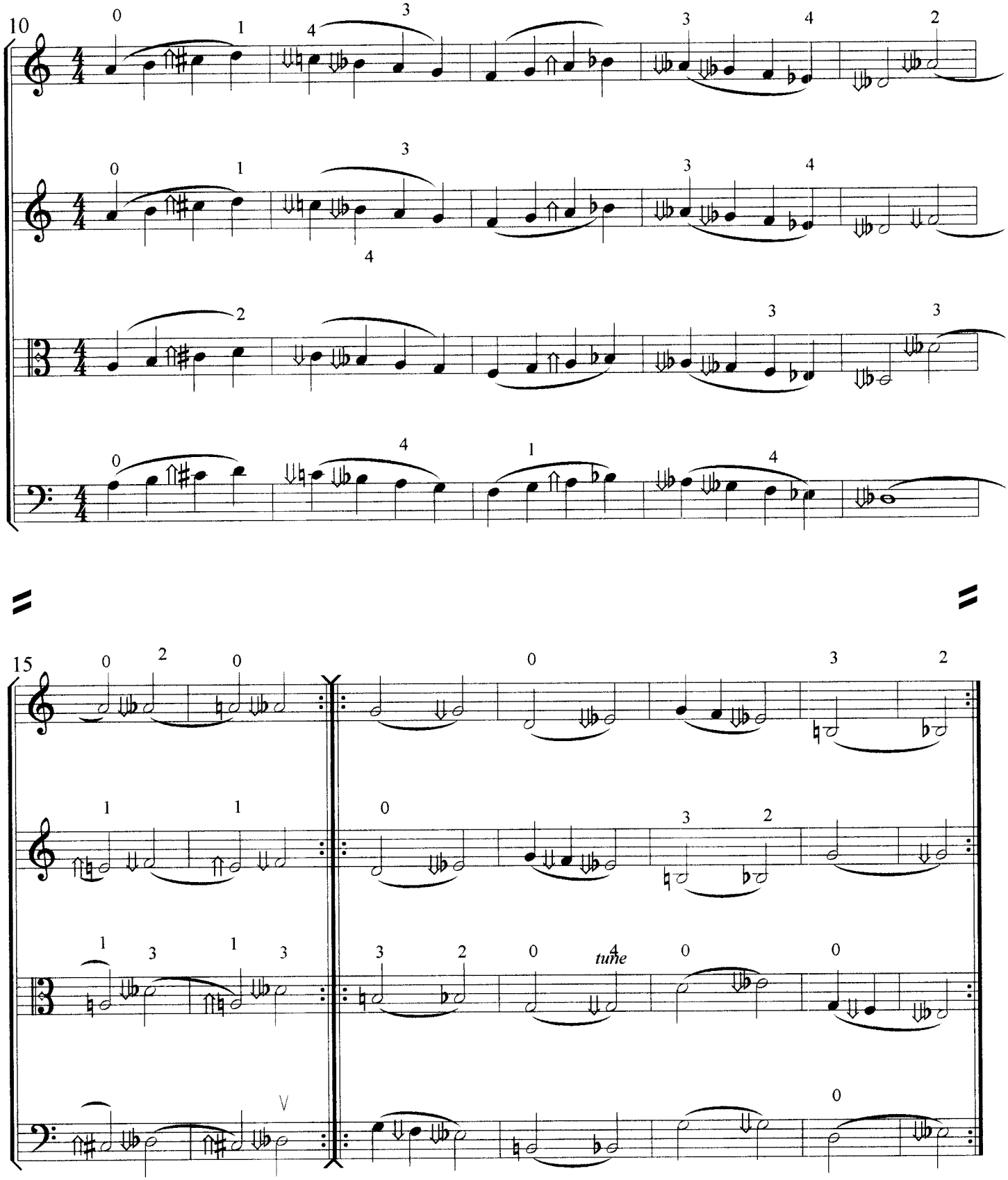
Choral intonation, correct immediately,
⇓ = rather flat, ⇑ = rather sharp




11
21
31

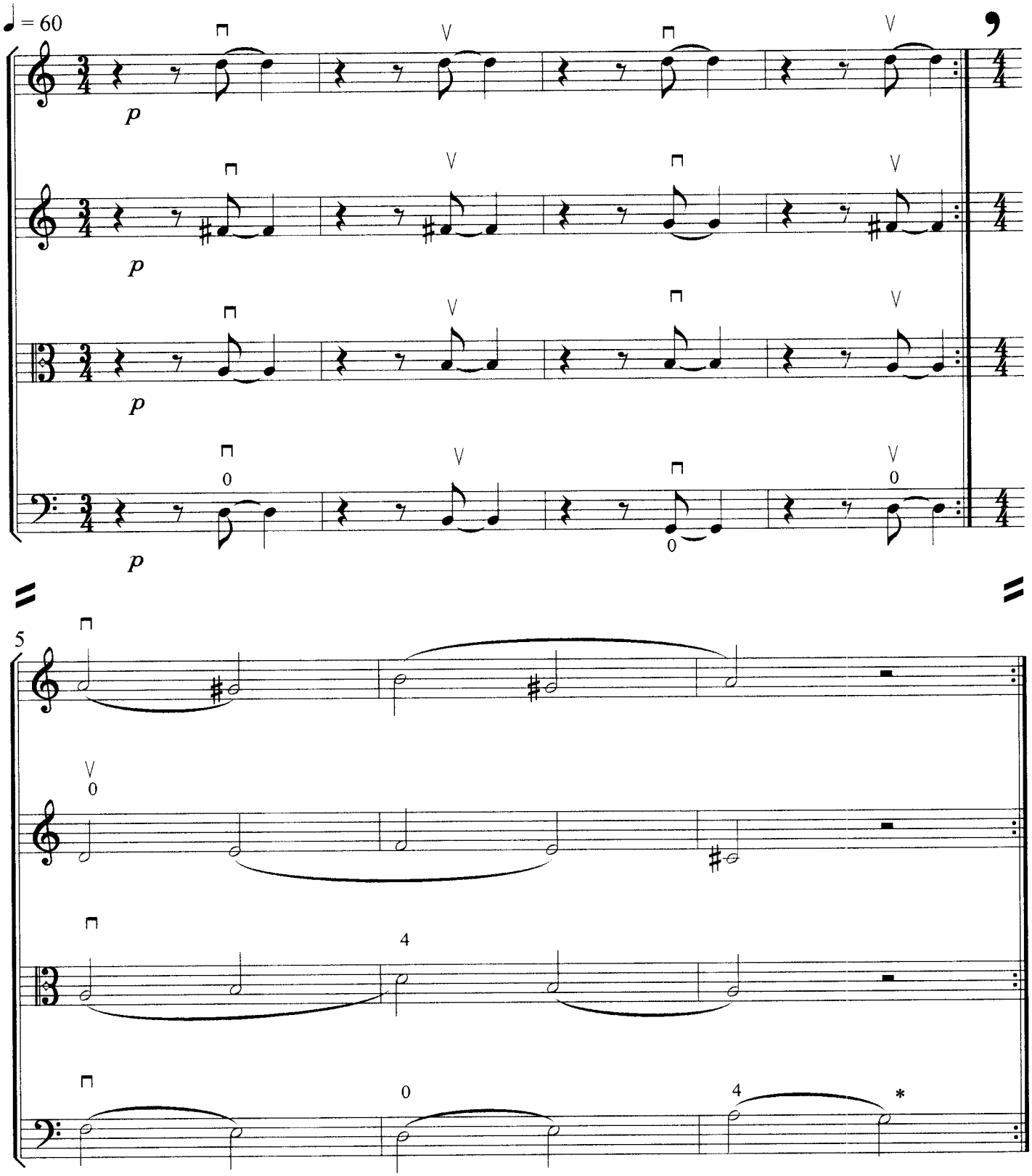
Leading-notes and modulation



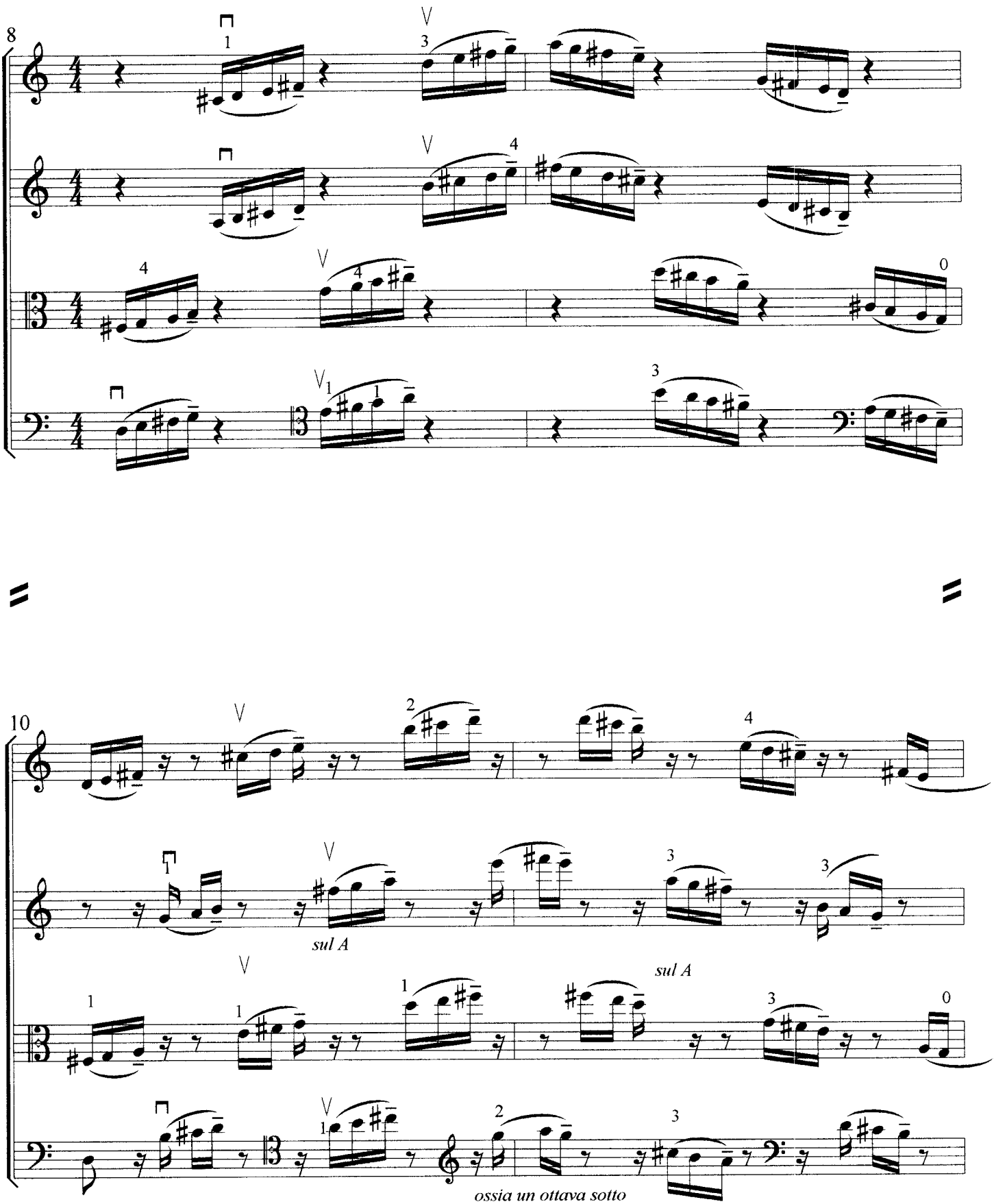

10
15
tune

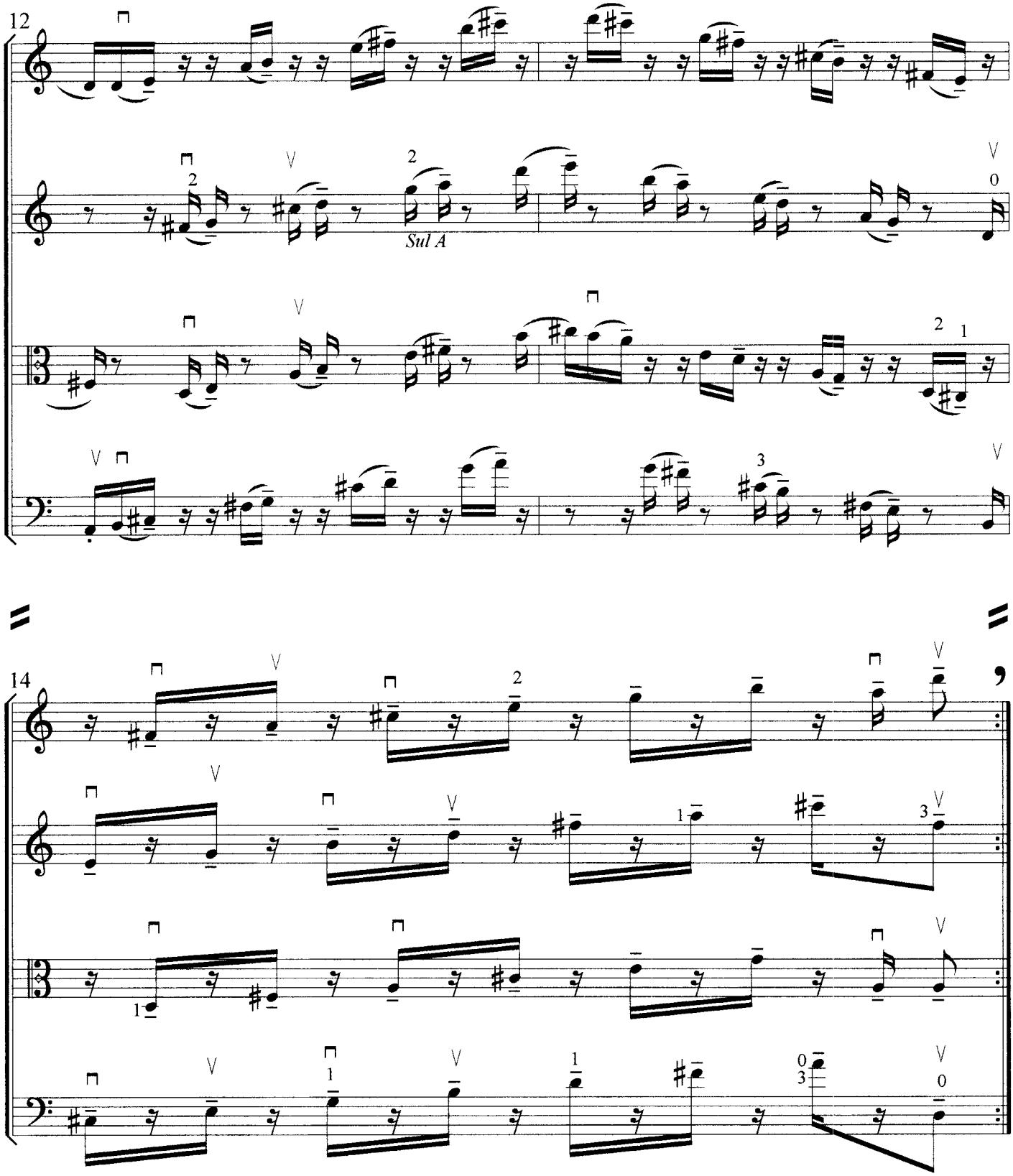
2. Unity of Execution

Attack, change, relieve and finish exactly together

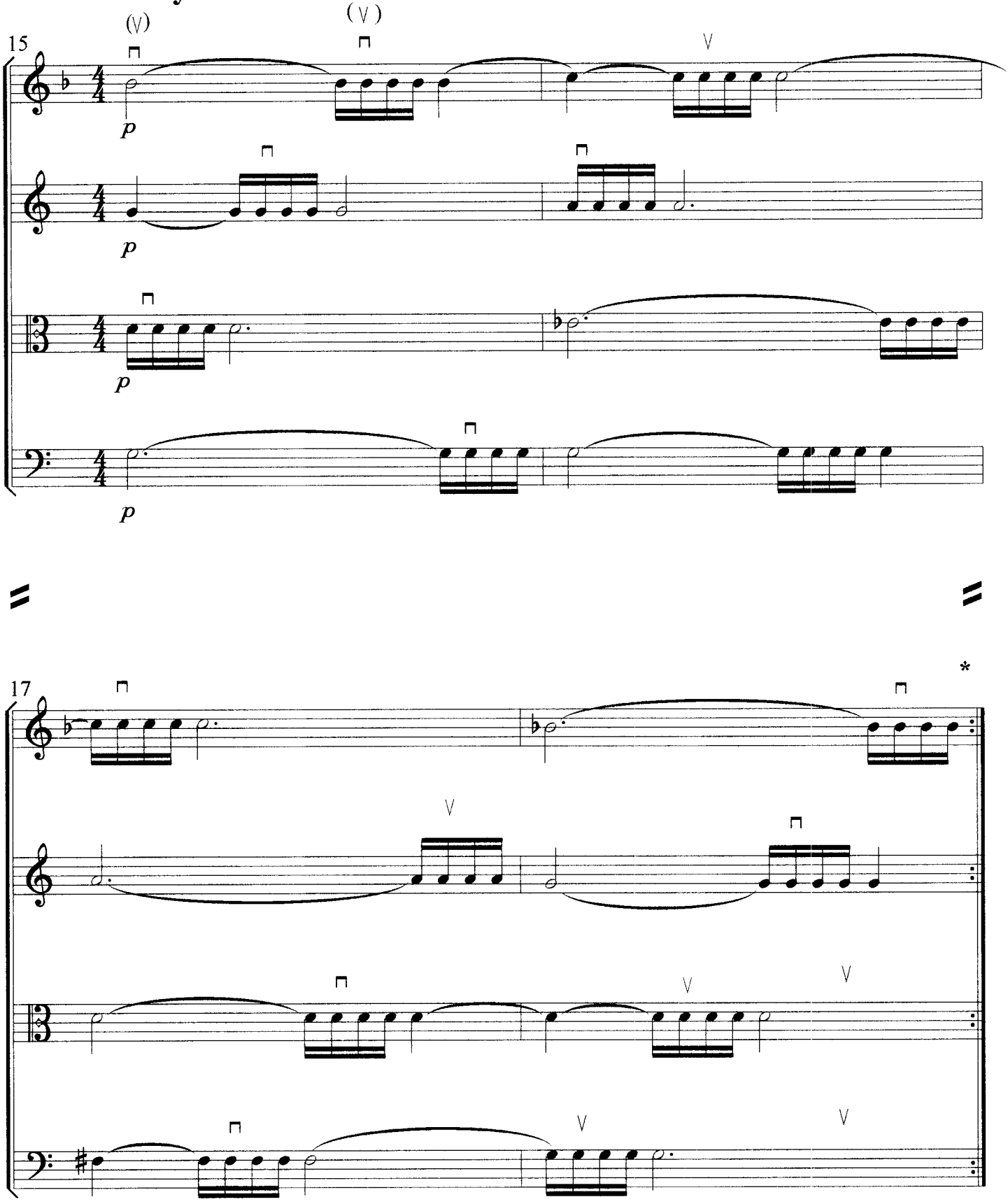


Tranquillo; no break, should be played as one instrument




12
Sul A
14

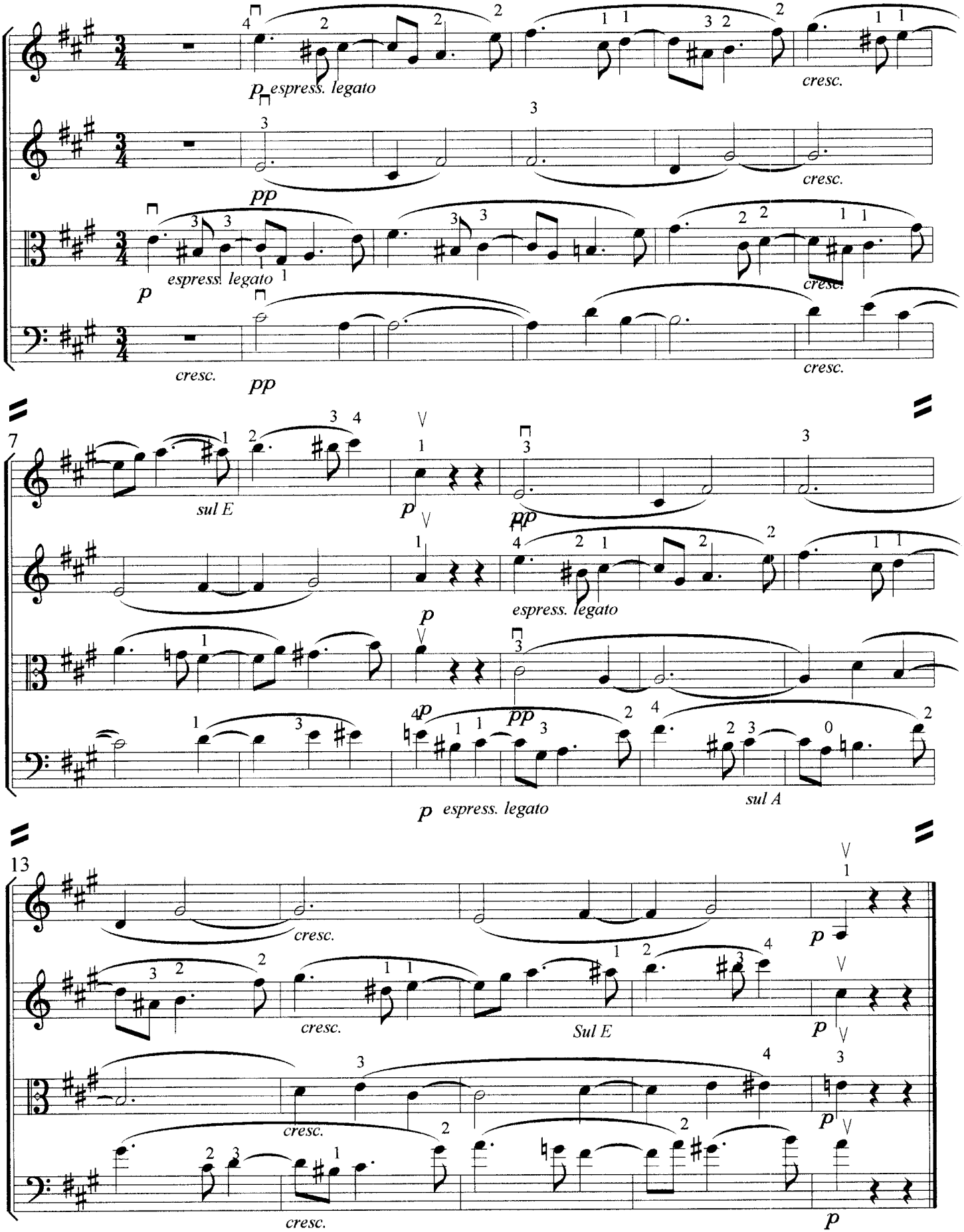
Continuity



** first violin second time: reversed bowing*

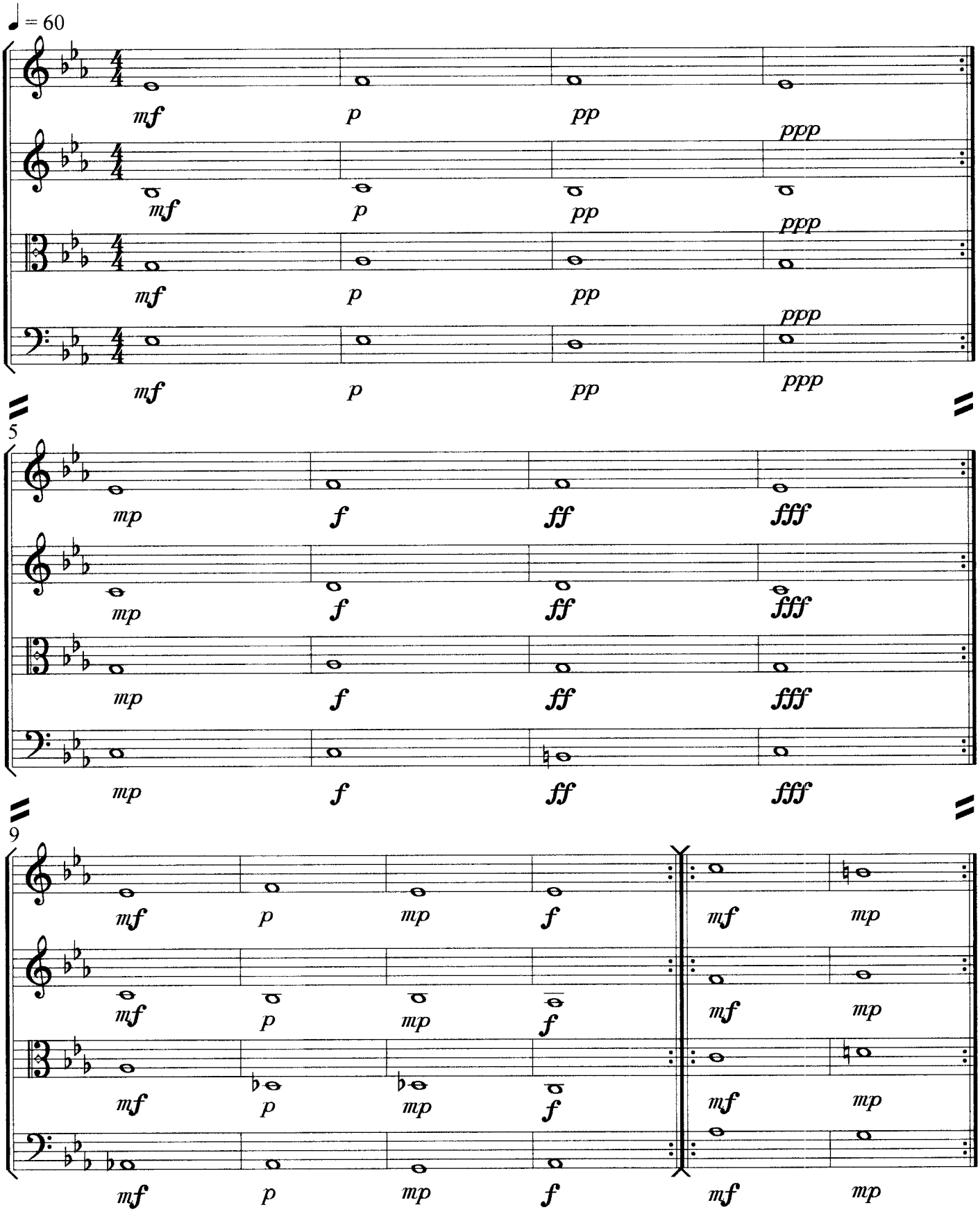
After Johannes Brahms op. 51 n° 2

Allegro non assai, poco tranquillo

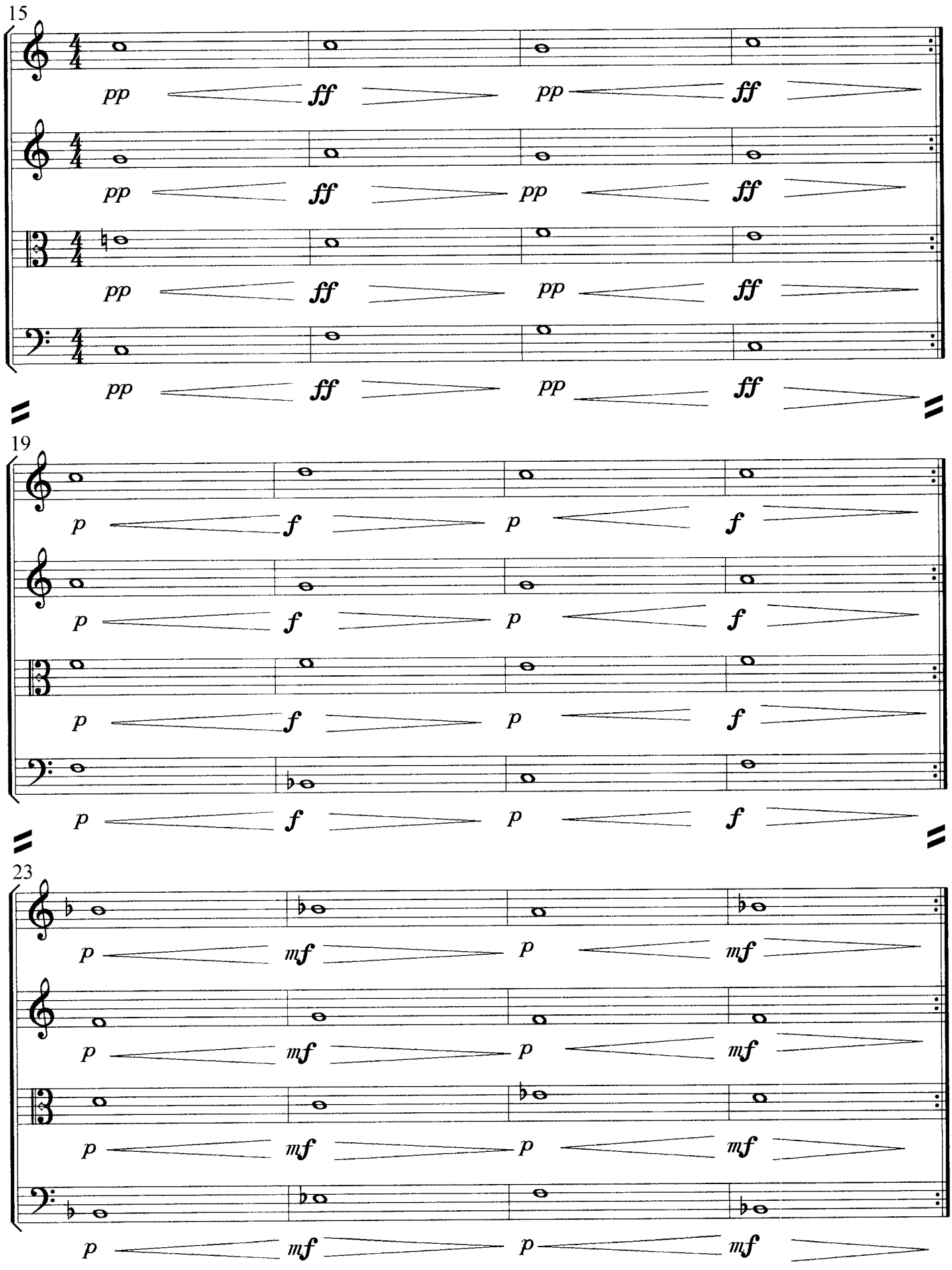


3. Dynamic Shading

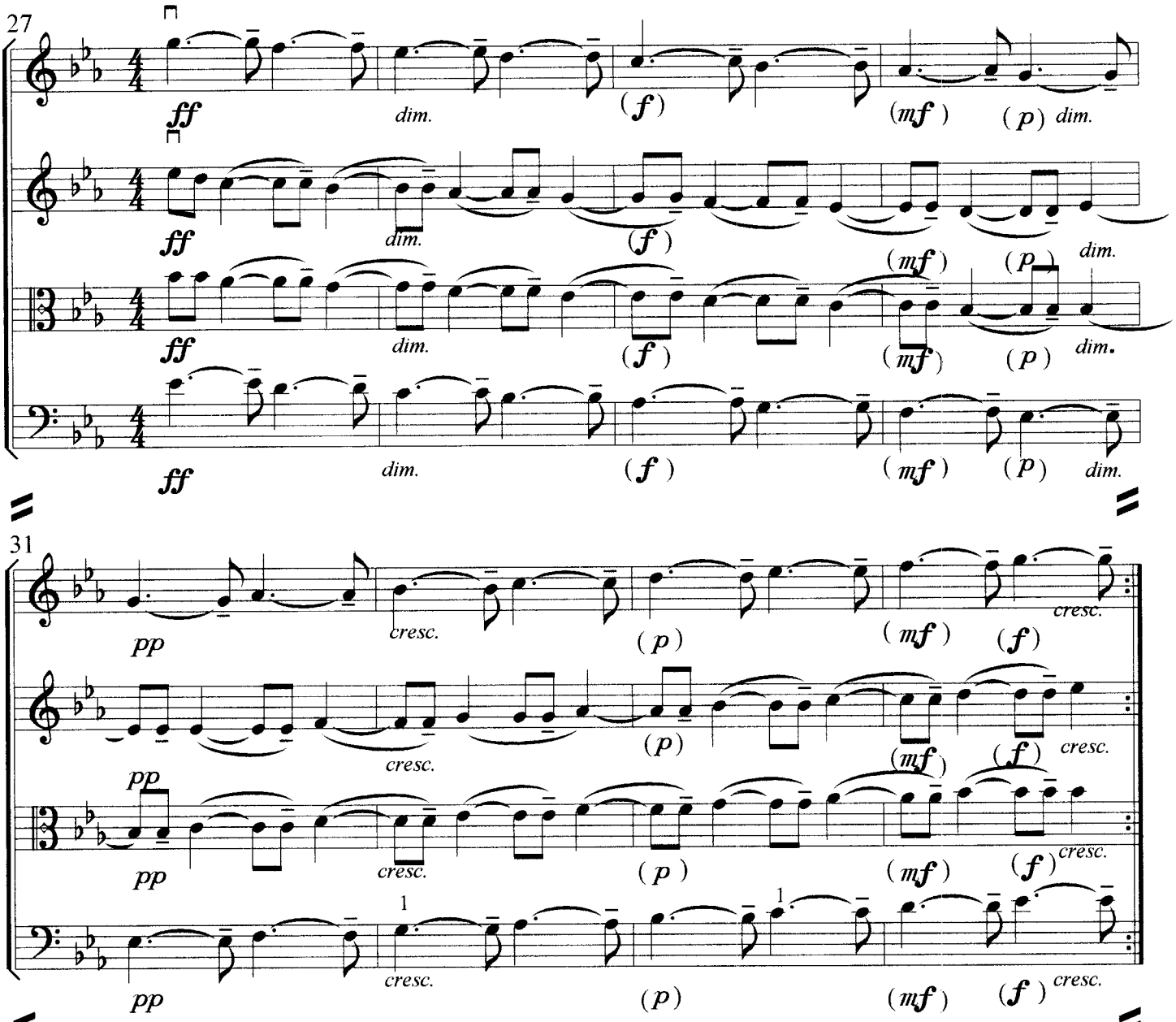
Distinct contrasts,
sustain the respective dynamic shading unaltered until the next note.



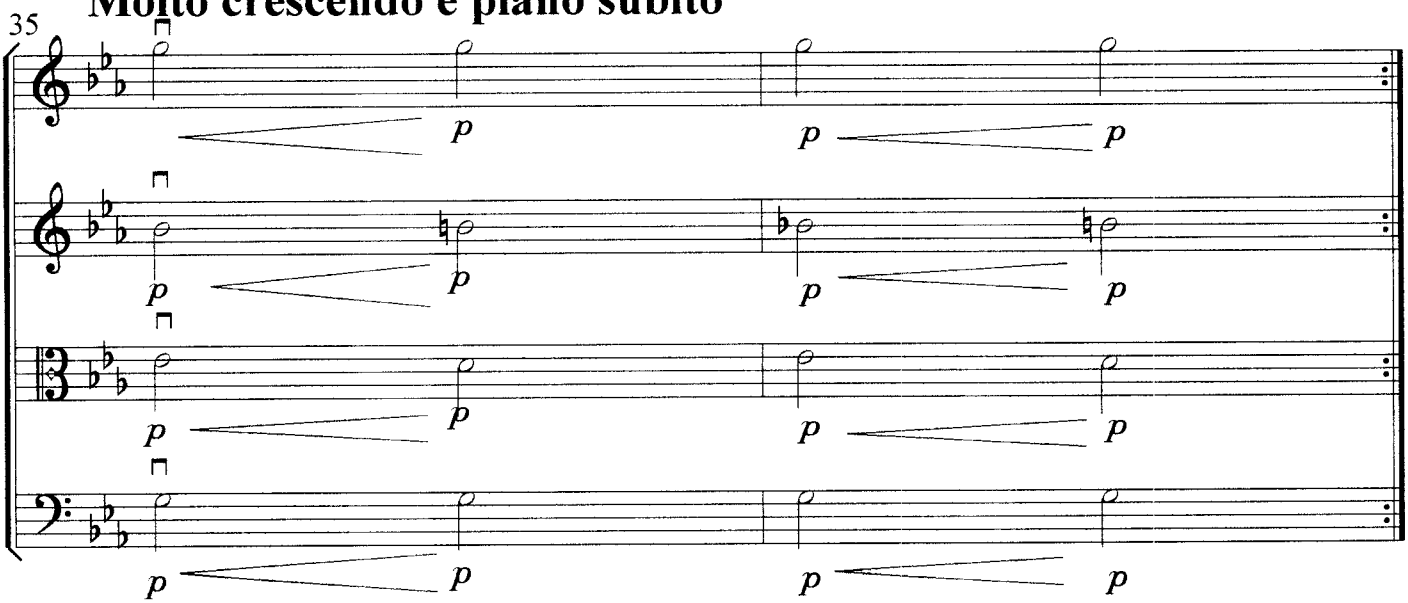
Keep the dynamics unaltered on the first quarter-note

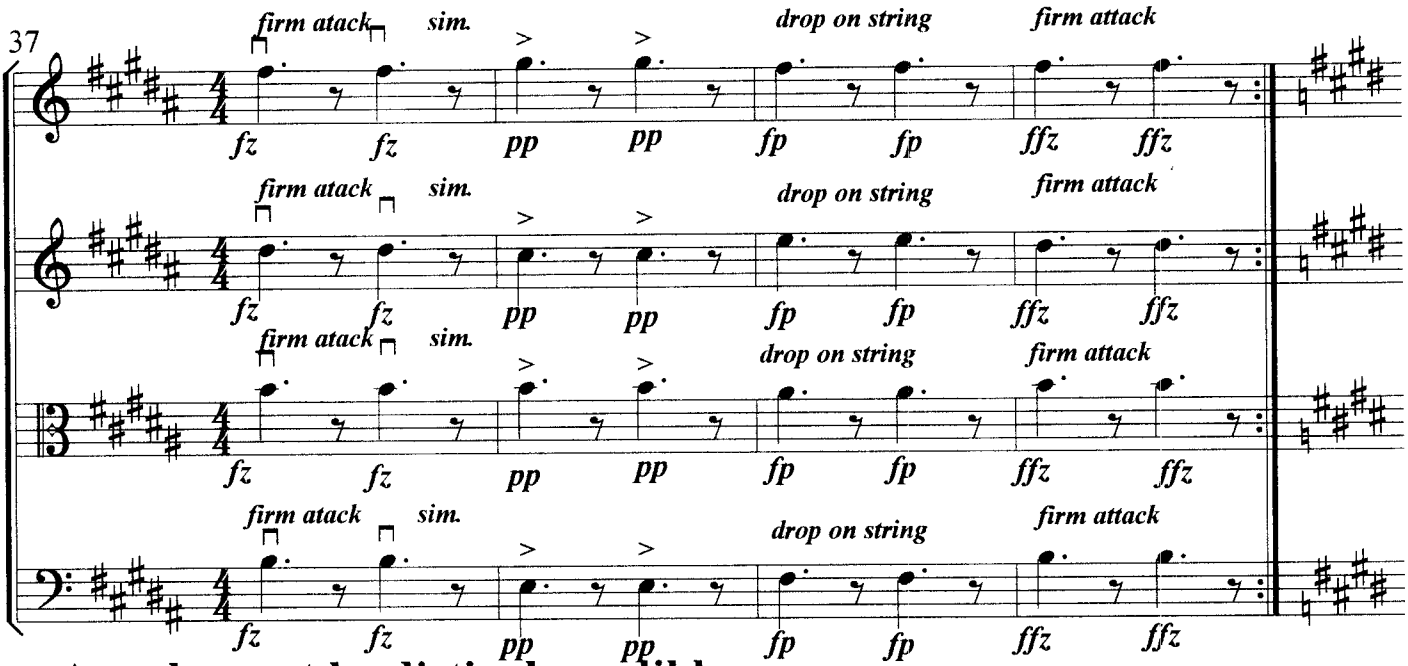


Exact graduation of longer *dim* and *cresc.*

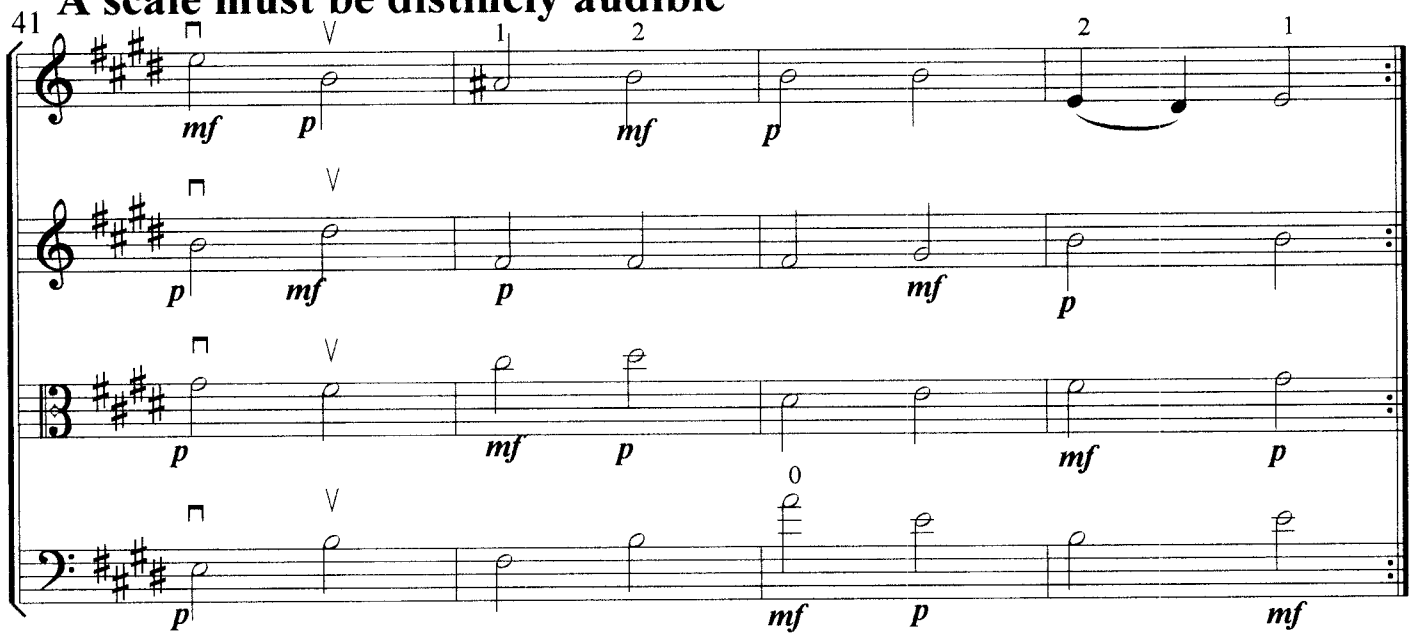


Molto crescendo e piano subito

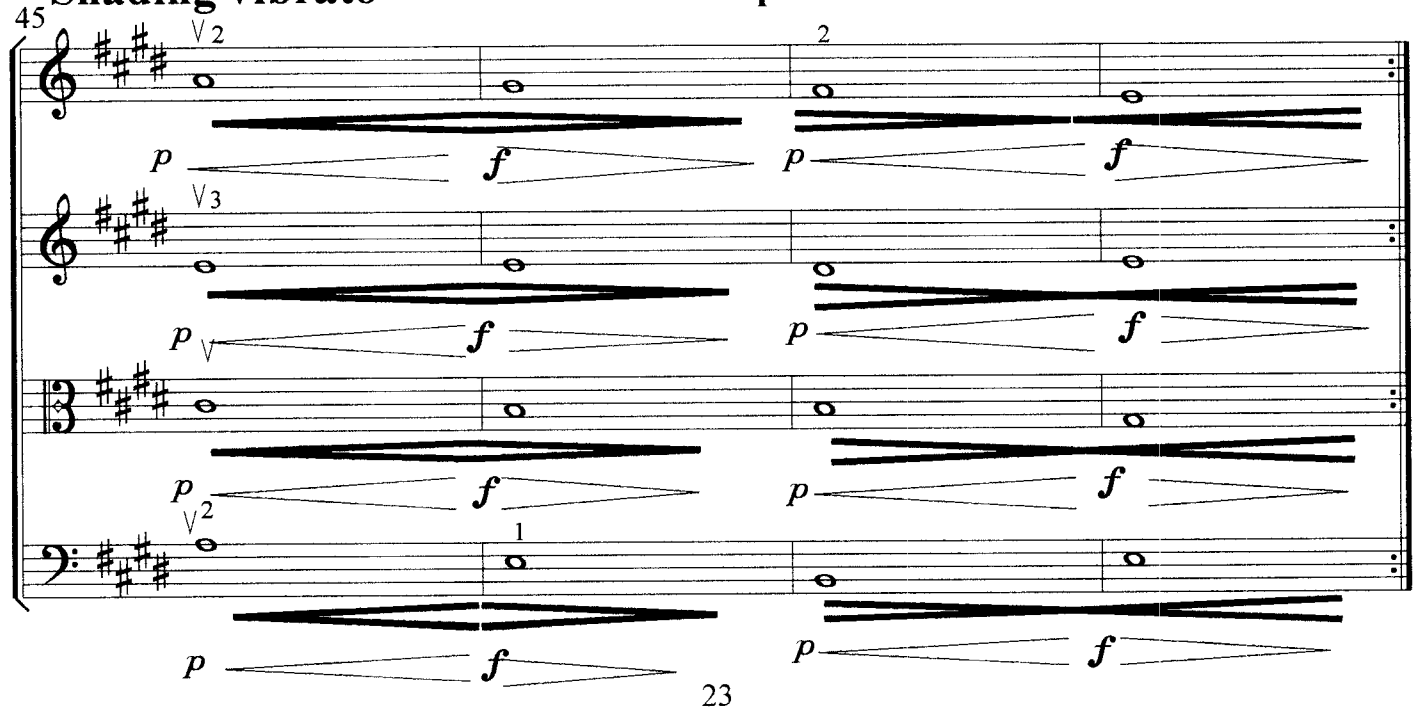




A scale must be distincly audible

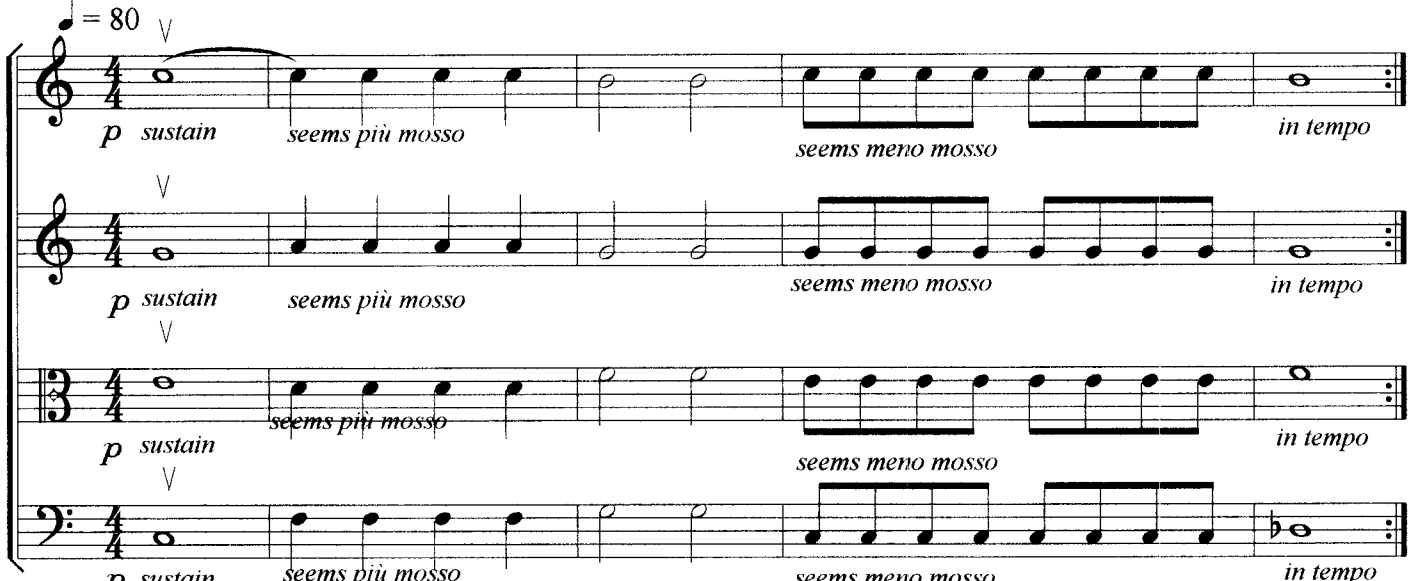


Shading vibrato **Vibrato amplitude =**

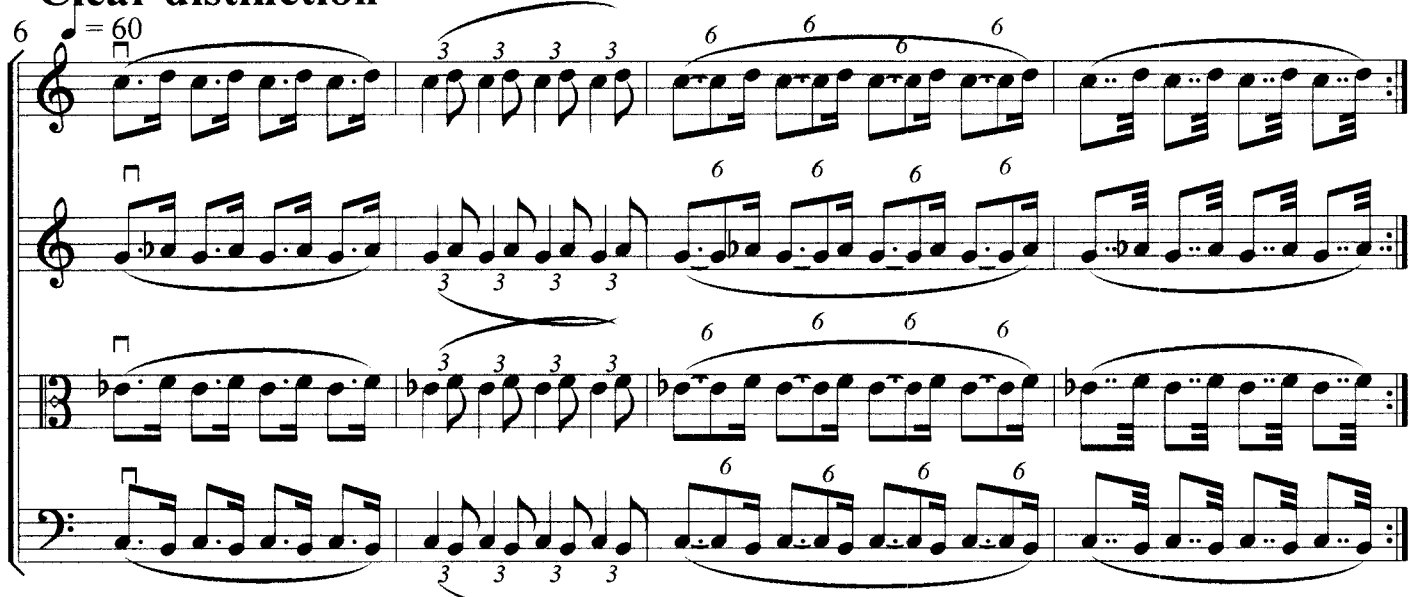


4. Rhythm

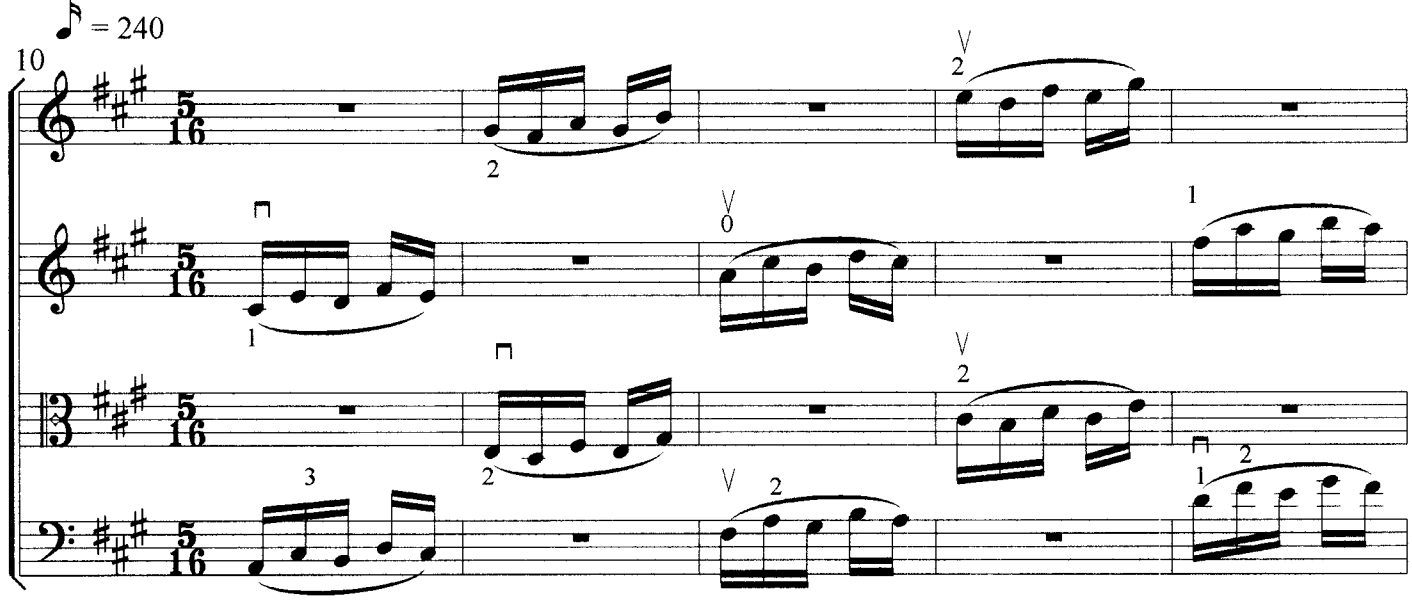
Play once with metronome, twice without

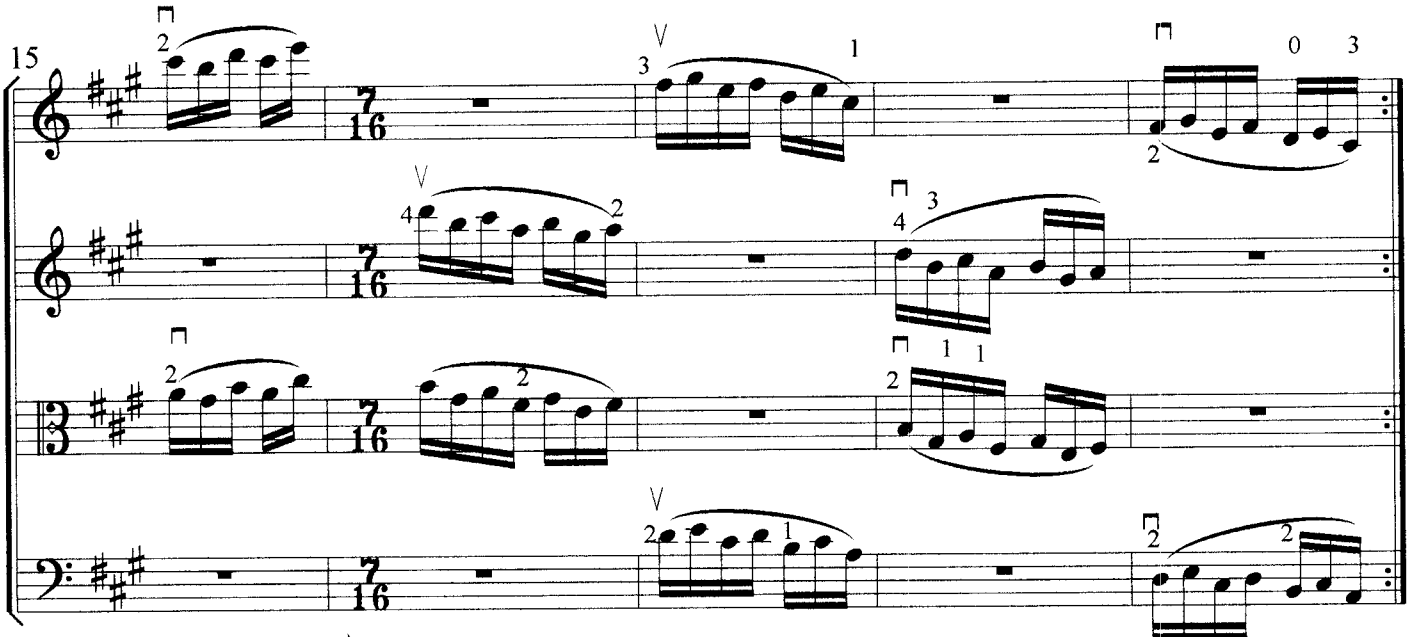


Clear distinction

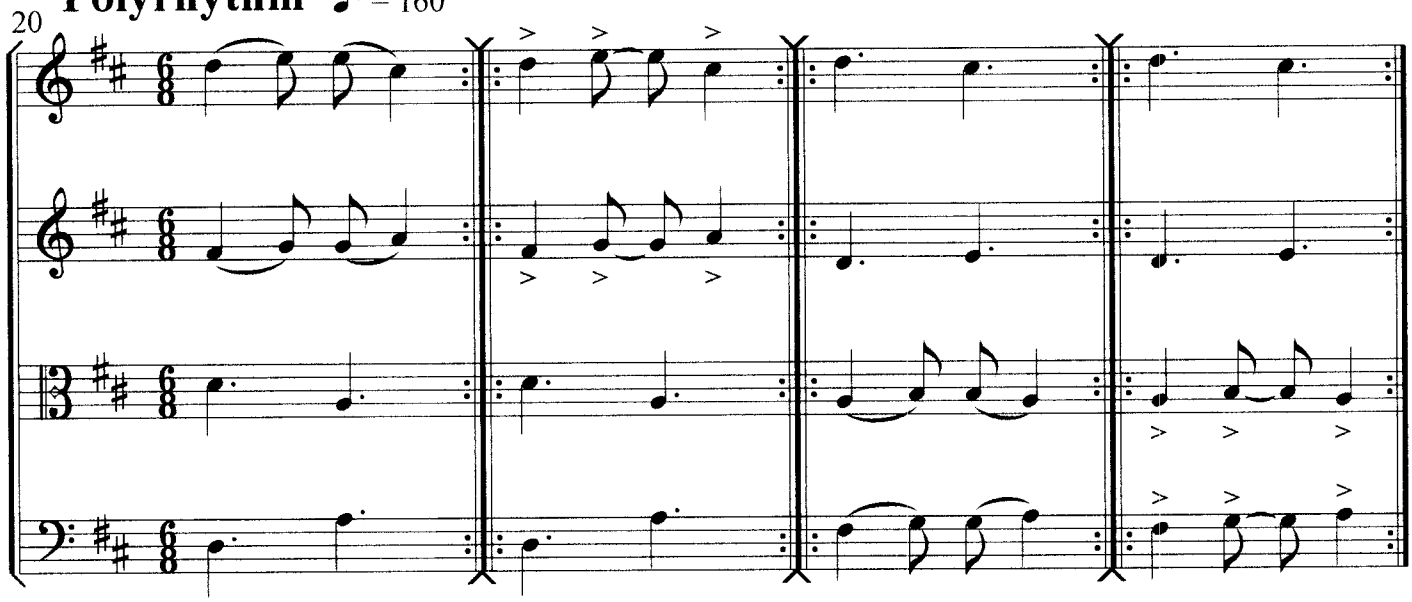


Tenuto; no breaks. L'istesso tempo

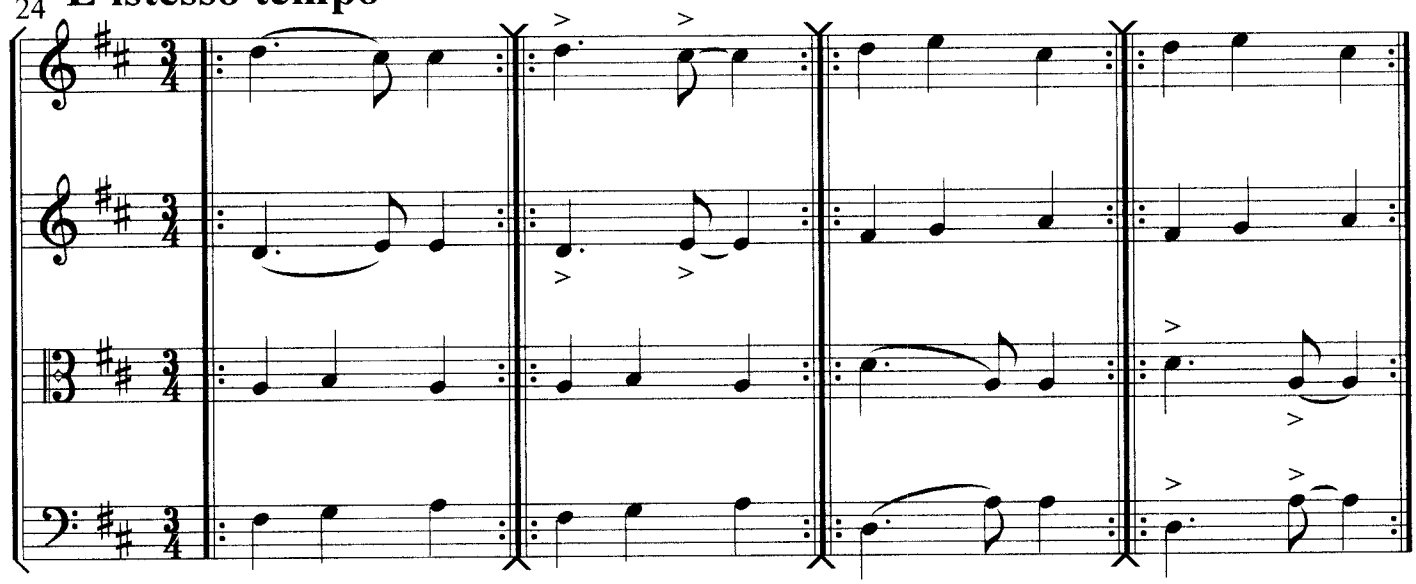


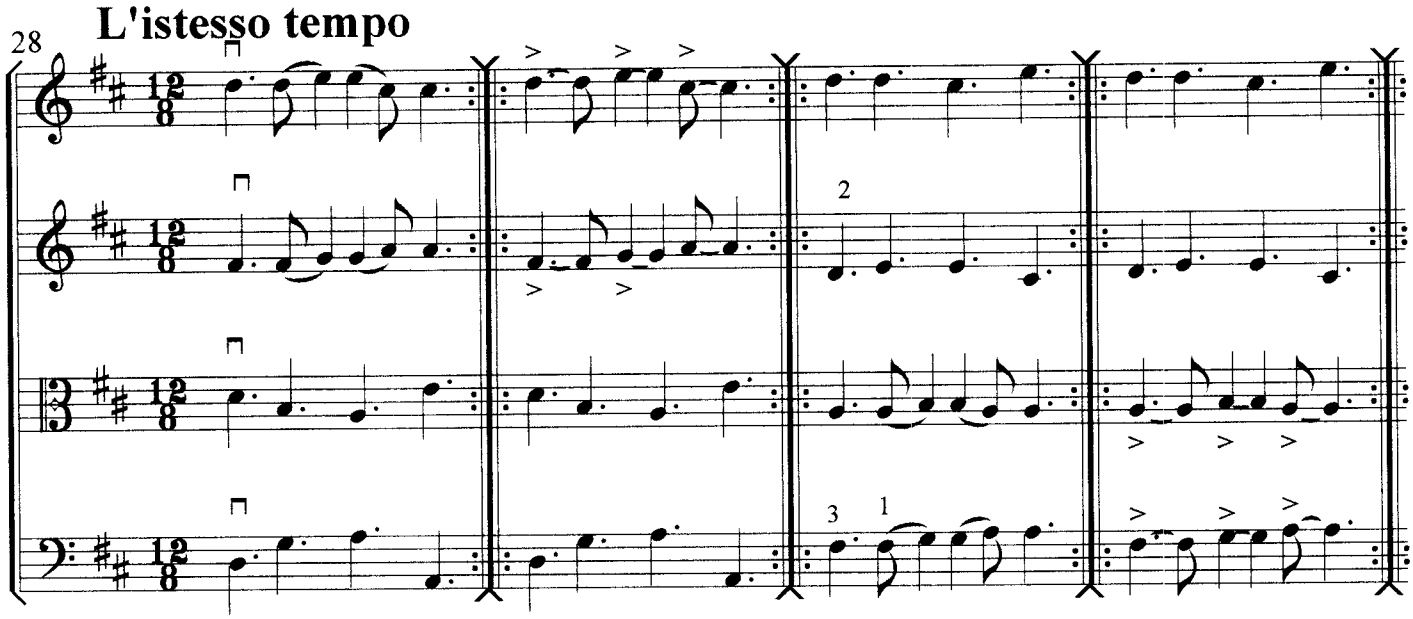


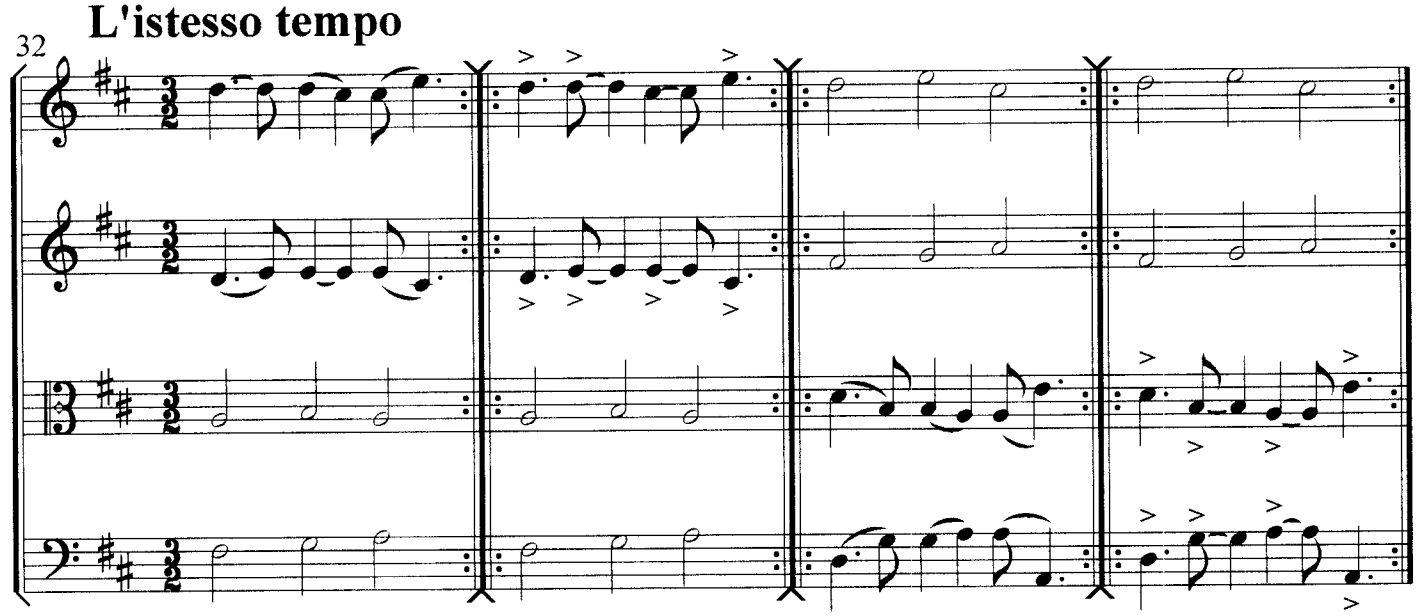
Polyrhythm ♪ = 160



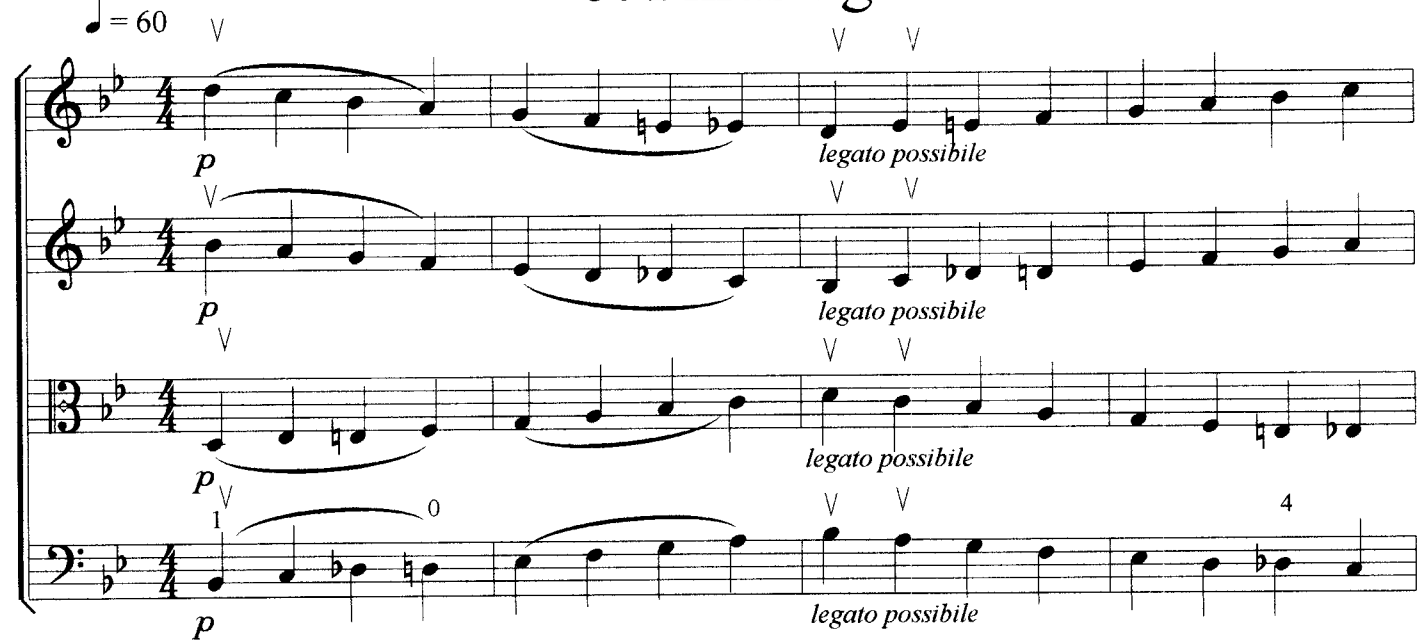
L'istesso tempo

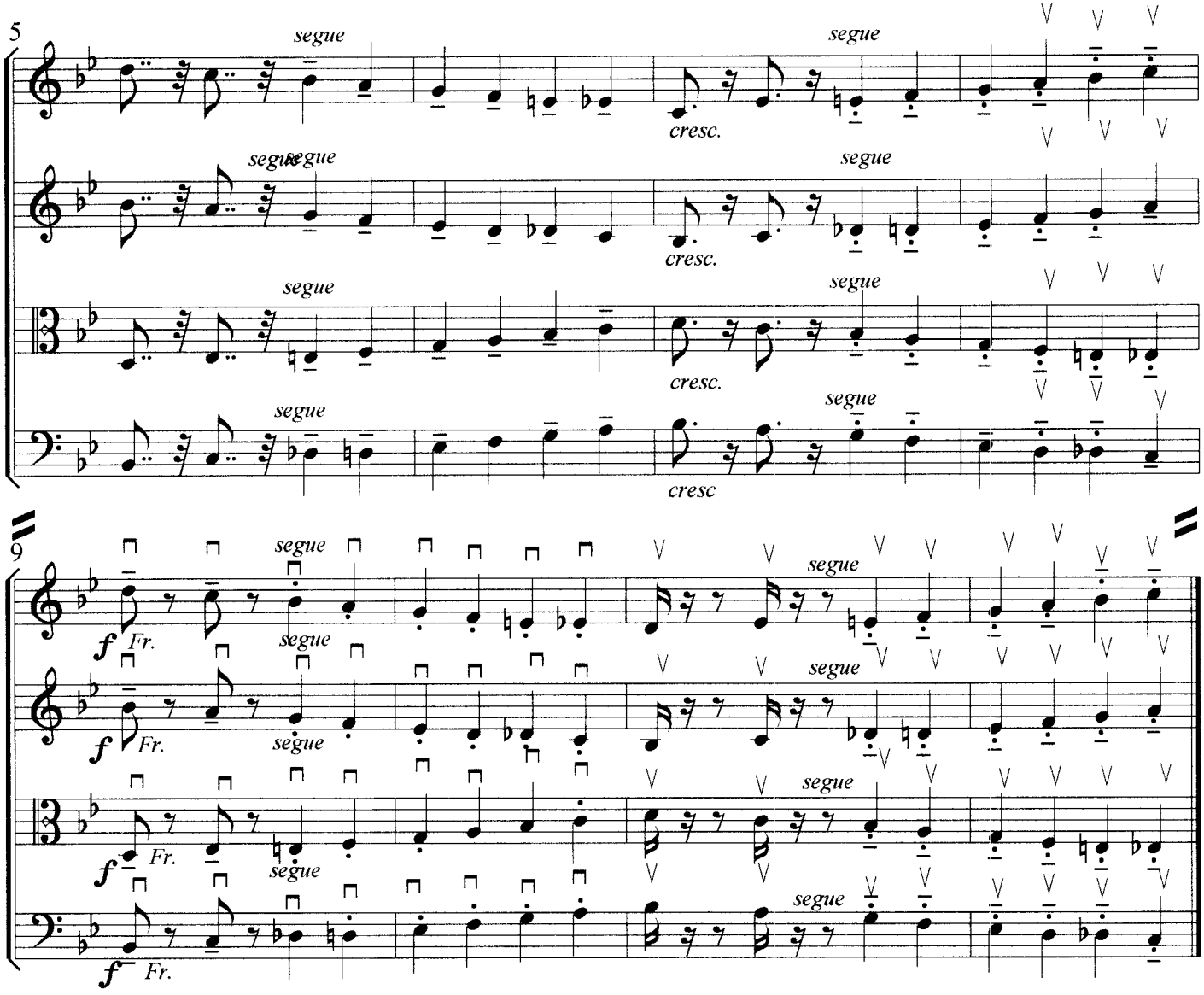



28
L'istesso tempo

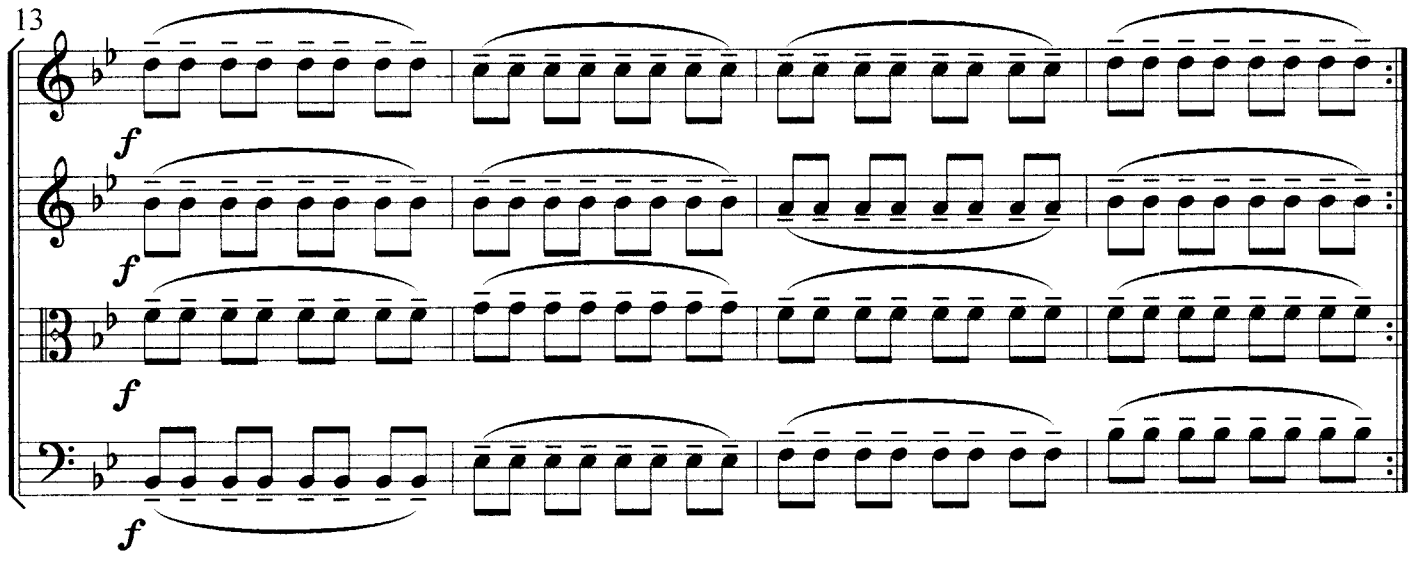

32
L'istesso tempo

5. Phrasing


♩ = 60
p
legato possibile
p
legato possibile
p
legato possibile
p
legato possibile

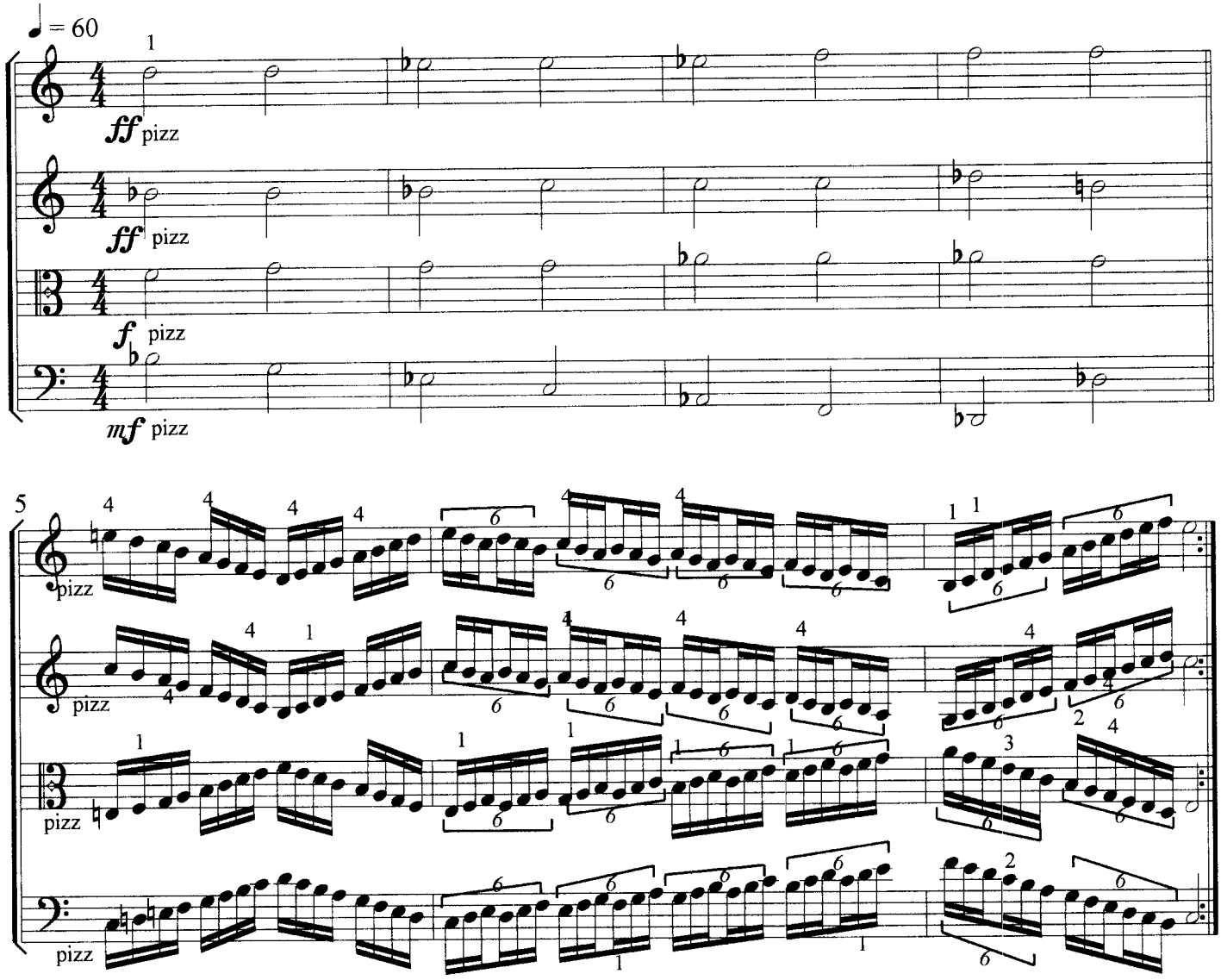


Portato. Unbroken legato with accents



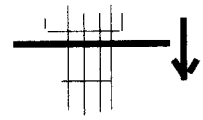
6. Tone Production

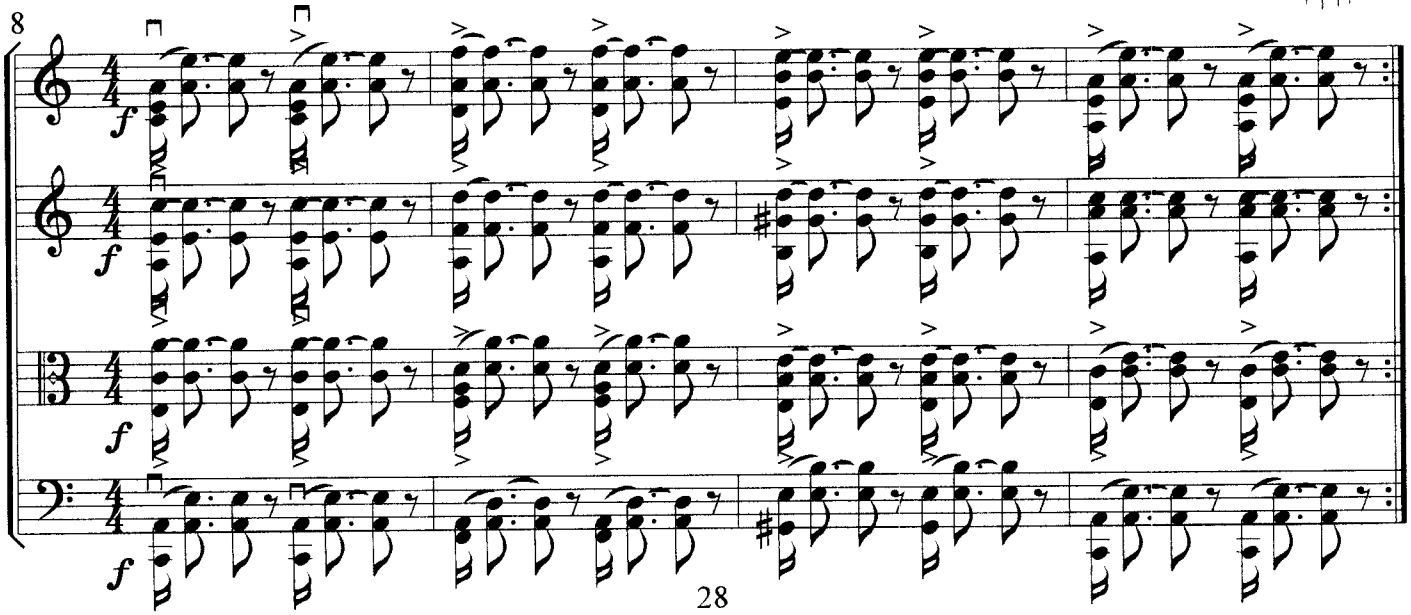
Strong pressure on the string, no vibrato



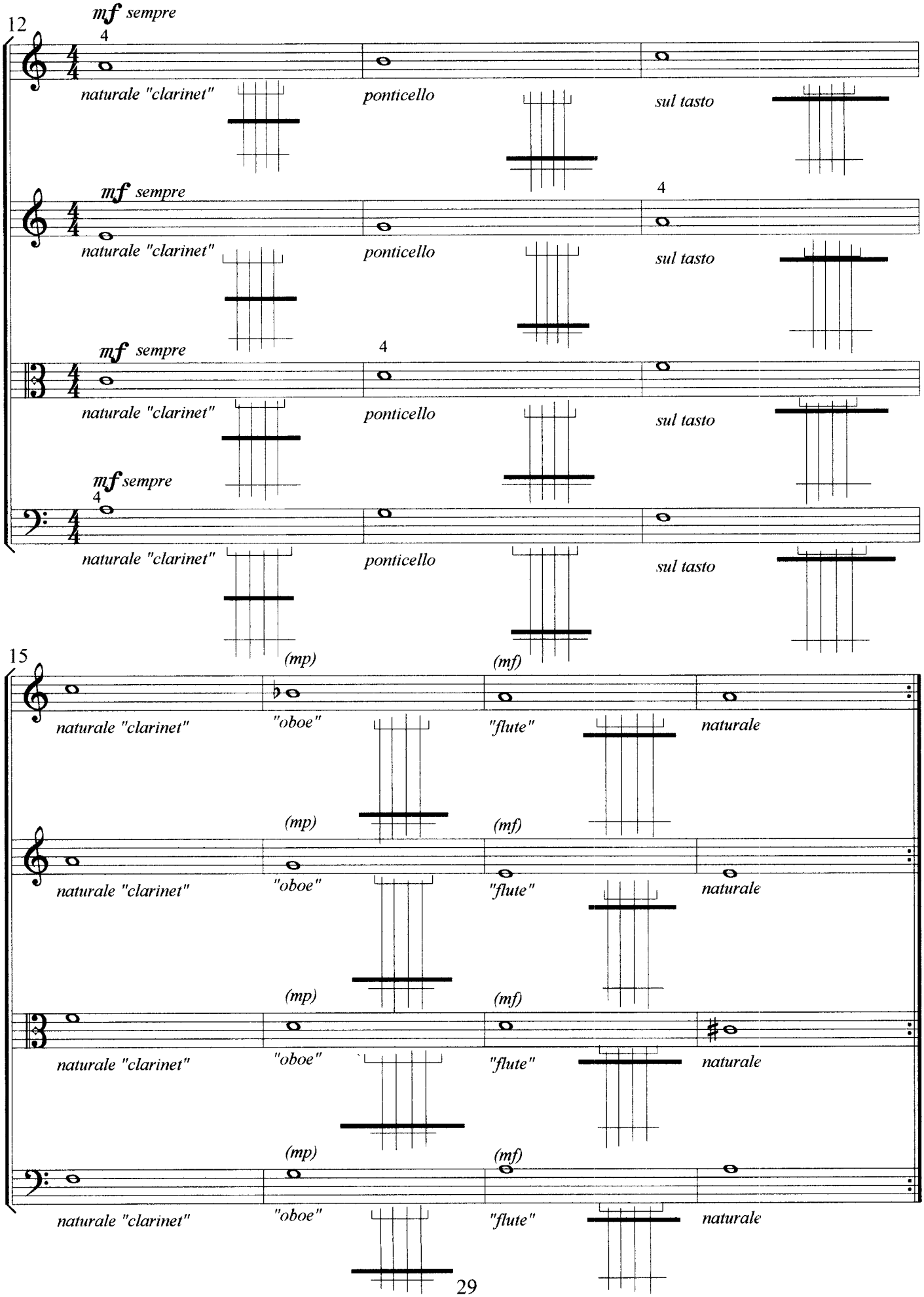
Chords

Firm attack; point of contact changing rapidly from fingerboard to bridge





Timbres

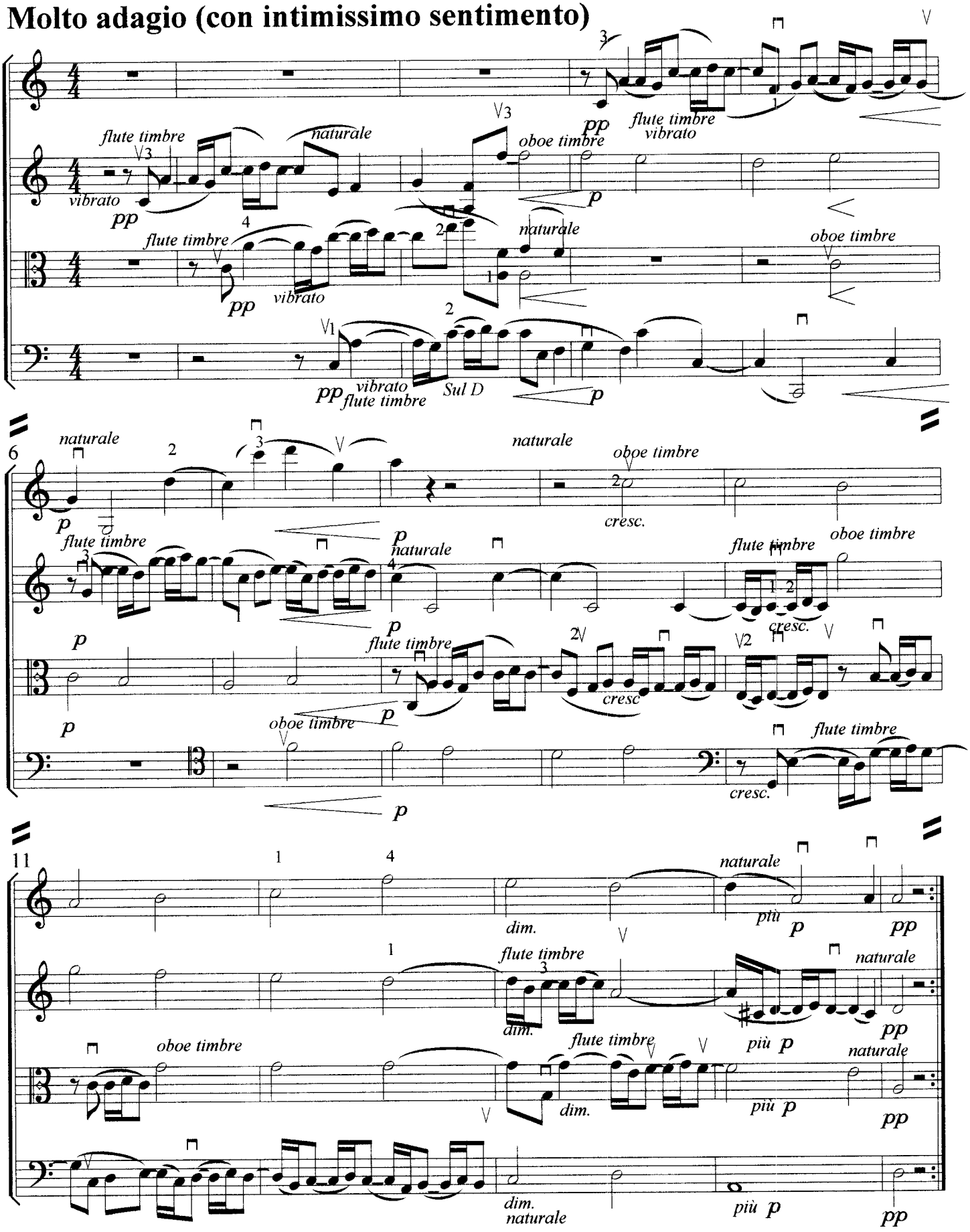

12
mf sempre
naturale "clarinet"
ponticello
sul tasto
15
(mp)
(mf)
"oboe"
"flute"
naturale

Excerpt from Beethoven op. 132

Flute timbre: Towards fingerboard, slightly more pressure.

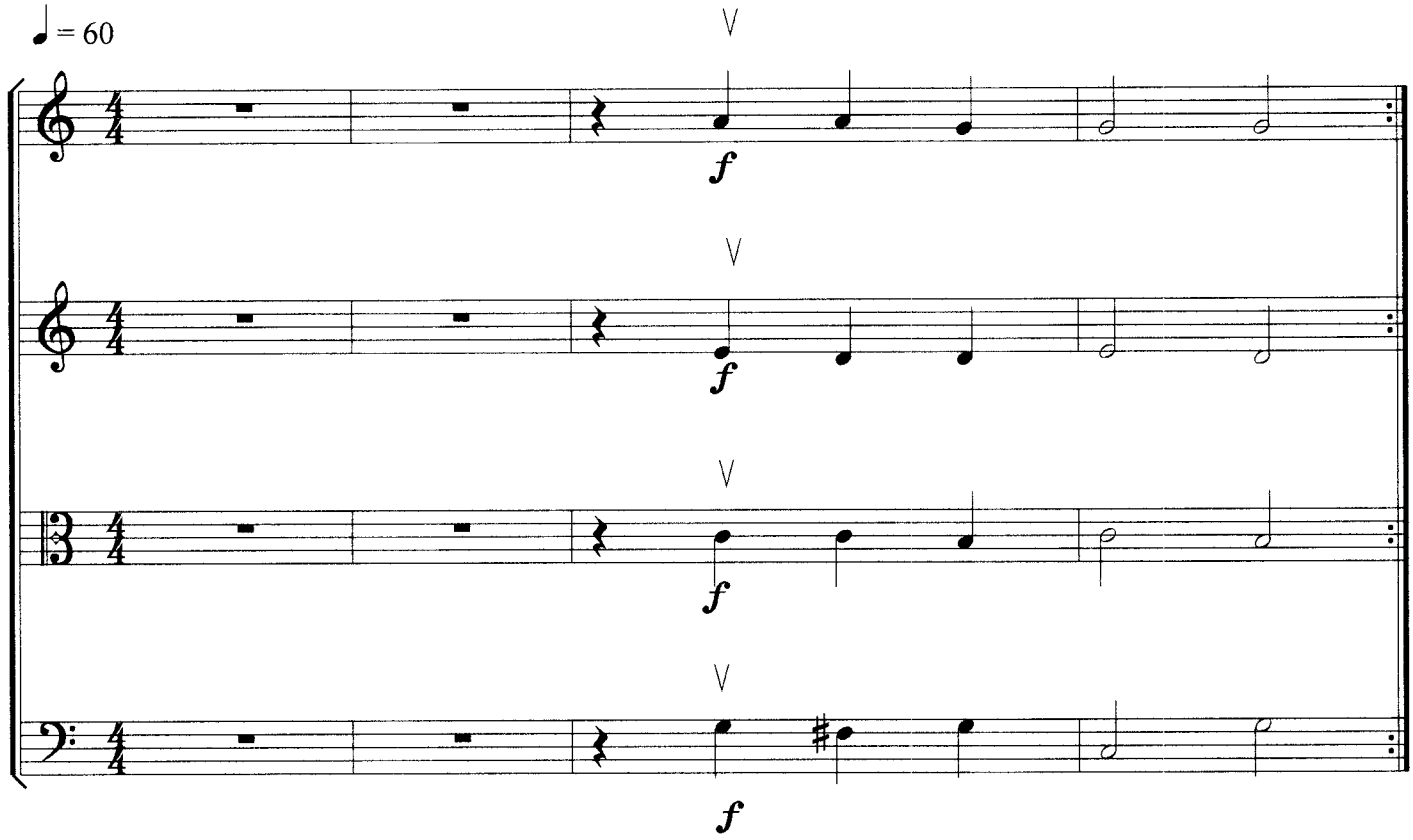
Oboe timbre: Towards the bridge, slighly less pressure.

Molto adagio (con intimissimo sentimento)



7. Tempo

First bar: Count together, second bar: mute counting individually



Simile:

1) ♩ = 120 see preface

2) ♩ = 80

3) ♩ = 40

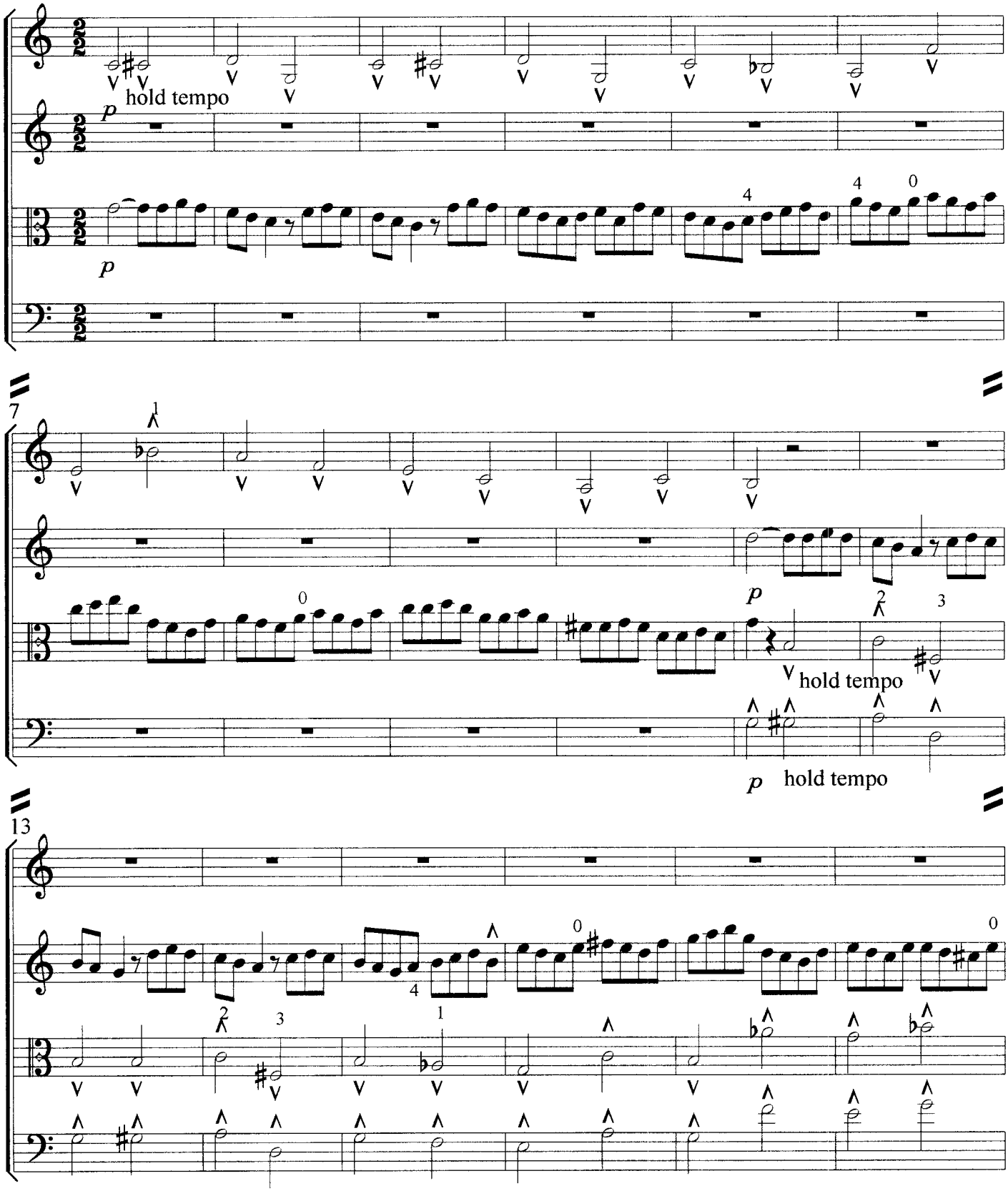
4) ♩ = 48

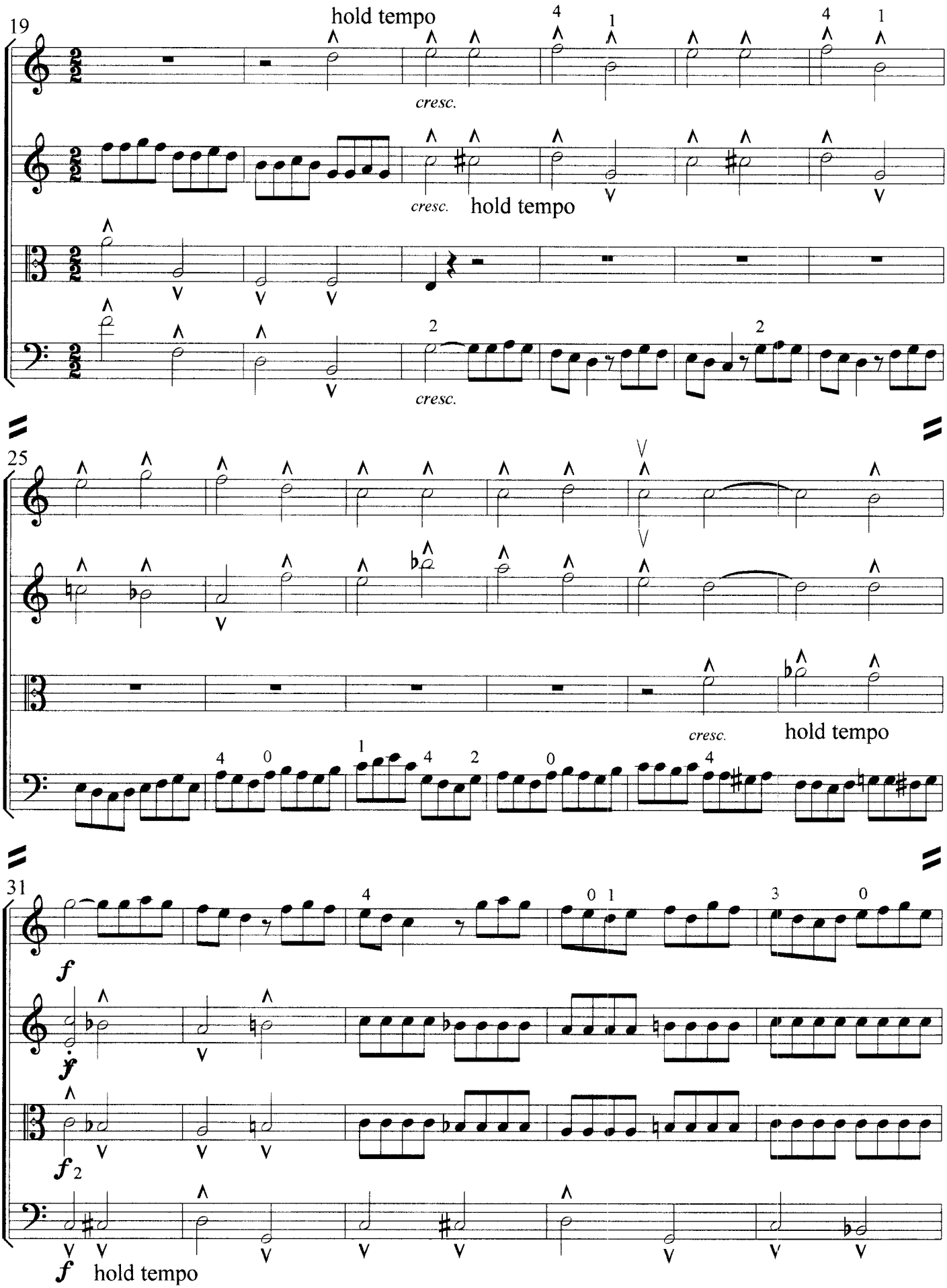
5) ♩ = 96

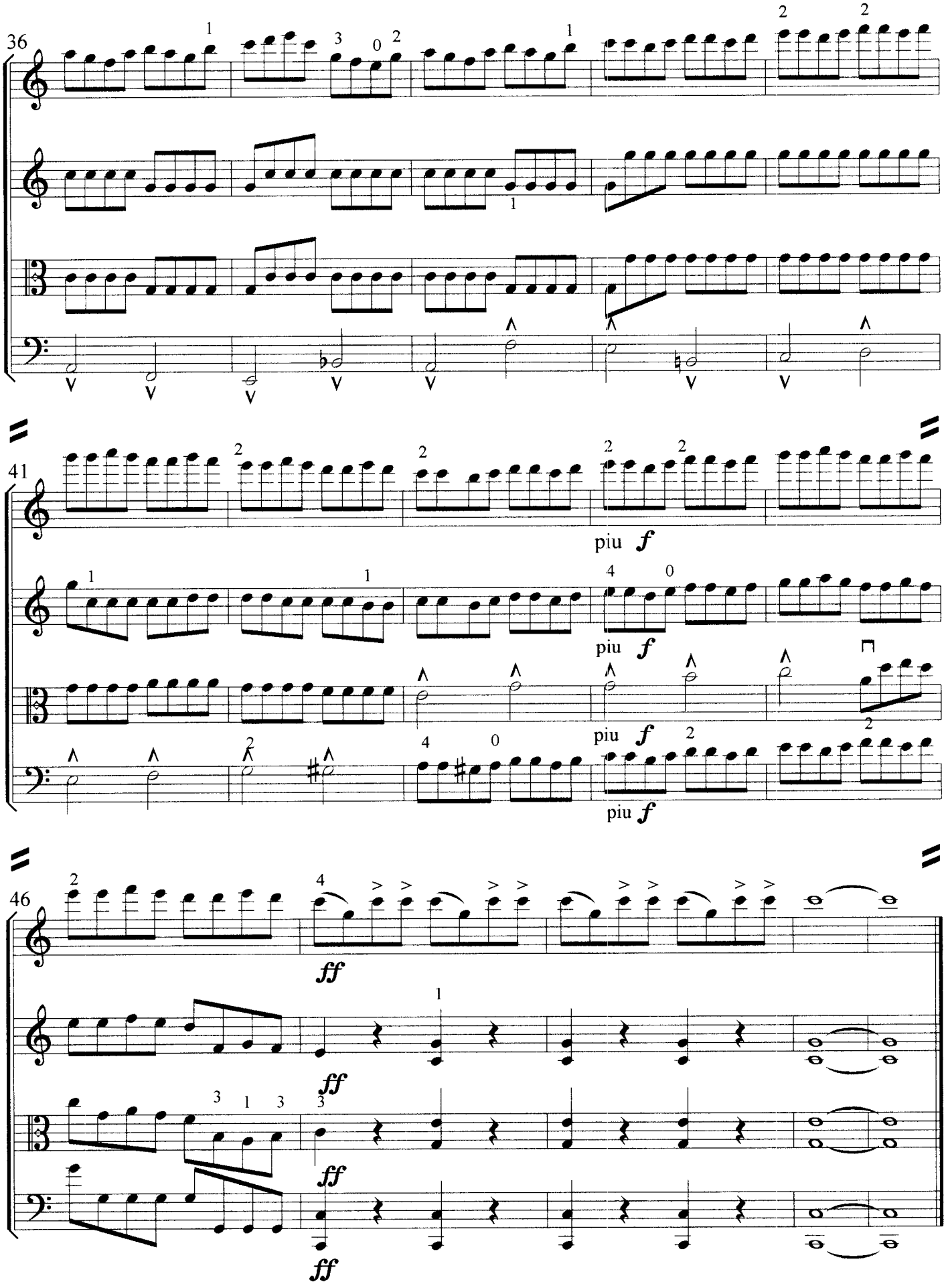
Excerpt from Beethoven op. 53 n°3

Accompaniment: Tempo giusto! Begin half-notes as late as possible

Allegro molto ♩ = 144




19
hold tempo
cresc.
cresc.
hold tempo
cresc.
25
cresc.
hold tempo
31
f
f
f 2
f
hold tempo


36
41
piu f
46
ff