

Chapter 7

Roman Numerals and Cadences

7.1 Roman Numeral Chord Symbols

Music is full of patterns that are similar from one piece to the next. As we saw with minor scales, we were able to use scale degree numbers to show the different patterns for harmonic, melodic, and natural minor, despite the fact that there are 15 minor key signatures. Using numbers instead of note names helps us see these patterns. Thinking of music in terms of numbers is also helpful with **transposition**, which means moving melodies and/or chord progressions from one key to another. Thinking of music in terms of numbers also helps us to analyze it and to spot similar patterns between many different pieces in different keys.

We will use Roman numerals to represent chords within a specified key. The Roman numeral “I” represents a triad built on $\hat{1}$, or the 1st note of the scale. Uppercase Roman numerals represent major triads and lowercase Roman numerals (e.g., “i”) represent minor triads. Uppercase Roman numerals with a “+” are augmented (e.g., “III+”), and lowercase Roman numerals with a “°” are diminished (e.g., “vii°”). (There is also the [Nashville Number System](#), which uses Arabic numbers for chords instead of Roman numerals.)

| <i>Key</i> | <i>Lead-Sheet</i> | <i>Root</i> | <i>Scale Degree of Root</i> | <i>Roman Numeral</i> | <i>Notes in Chord</i> |
|------------|-------------------|-------------|-----------------------------|----------------------|--------------------------|
| G | Bm | B | $\hat{3}$ | iii | B–D–F \sharp |
| f | G $^\circ$ | G | $\hat{2}$ | ii $^\circ$ | G–B $^\flat$ –D $^\flat$ |
| c | E $^\flat$ | E $^\flat$ | $\hat{3}$ | III | E $^\flat$ –G–B $^\flat$ |

For inversion of Roman numerals, we will use a modified “slash chord” notation until we study Figured Bass later on. For now, we will write “I/3rd” if the 3rd of the I chord is the bass note, for example.

C: I/3rd



the 3rd of the I chord
(C–E–G) is in the bass

G: ii/5th



the 5th of the ii chord
(A–C–E) is in the bass

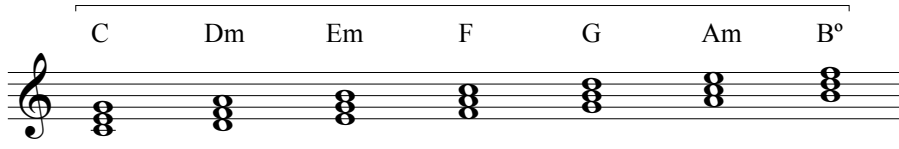
The following table offers more examples.

| Key | Roman Num. | Root | Scale Deg. of Root | Notes in Chord | Bass Note |
|-----|------------|----------------|--------------------|---------------------|----------------|
| g | V/3rd | D | 5̂ | D-F [#] -A | F [#] |
| a | iv/5th | D | 4̂ | D-F-A | A |
| D | vii°/3rd | C [#] | 7̂ | C [#] -E-G | E |

7.2 Diatonic Chords in Major

Observe the pattern of diatonic chords in major represented by Roman numerals. (**Diatonic** means notes *within* a key signature and can be contrasted with the term “chromatic.”) One sees the pattern M-m-m-M-M-m-° in triad quality.

Lead-sheet symbols

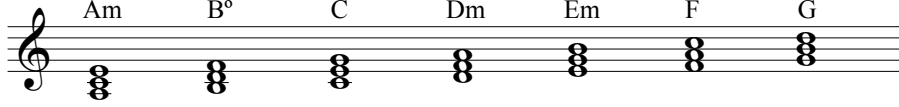
| | | | | | | | |
|--|---|----|-----|----|---|----|------|
| | C | Dm | Em | F | G | Am | B° |
|  | | | | | | | |
| C: | I | ii | iii | IV | V | vi | vii° |

Roman numerals
(require key designation)

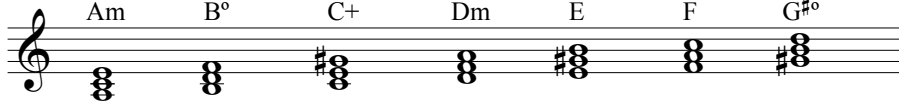
7.3 Diatonic Chords in Minor

Because there are three versions of the minor scale, there are more than seven diatonic chords in minor. The sixth and seventh scale degrees affect all of the triads except the tonic, making 13 possible diatonic triads in minor.

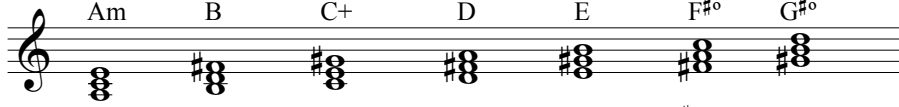
NATURAL MINOR

| | | | | | | | |
|--|----|-----|-----|----|-----------|----|-----|
| | Am | B° | C | Dm | Em | F | G |
|  | | | | | | | |
| a: | i | ii° | III | iv | v rare | VI | VII |

HARMONIC MINOR

| | | | | | | | |
|--|----|-----|--------------|----|---|----|------------------|
| | Am | B° | C+ | Dm | E | F | G [#] ° |
|  | | | | | | | |
| a: | i | ii° | III+ rare | iv | V | VI | vii° |

MELODIC MINOR

| | | | | | | | |
|--|----|------------|--------------|------------|---|------------------|------------------|
| | Am | B | C+ | D | E | F [#] ° | G [#] ° |
|  | | | | | | | |
| a: | i | ii rare | III+ rare | IV rare | V | #vi° rare | vii° |

However, when one analyzes a large amount of tonal music, one finds the following Roman numerals are most commonly used in minor.

Most Commonly Used Chords (Roman numerals) in Minor

The diagram shows a treble clef staff with the following chords and Roman numerals:

| | | | | | | | |
|----|-----------------|-----|----|---|----|-----|------------------|
| Am | B ^o | C | Dm | E | F | G | G ^{#o} |
| i | ii ^o | III | iv | V | VI | VII | vii ^o |

Annotations:

- An arrow points from the text "from the natural minor scale" to the chords Am, B^o, C, Dm, and E.
- An arrow points from the text "from the harmonic minor scale" to the chords E, F, G, and G^{#o}.
- The Roman numeral V is circled and has an arrow pointing to it from the text "from the harmonic minor scale".
- The Roman numeral vii^o is circled and has an arrow pointing to it from the text "from the harmonic minor scale".

Notice that both VII (the “**subtonic triad**”) and vii^o (the “**leading-tone triad**”) are included. The subtonic triad (VII), built on the lowered $\hat{7}$ that occurs in *natural* minor, regularly occurs in [circle of fifth progressions in minor](#) and [in rock and pop music](#), while the leading-tone triad (vii^o), built on raised $\hat{7}$, is usually either a passing harmony or has [dominant function](#).

7.4 Cadences

We’ve been studying harmony—triads and chords. A **cadence** is a harmonic arrival point, a harmonic moment of stasis. A cadence can be compared to a comma or period in written language—the ear gets a moment to process a short passage of music, then the music continues. We will differentiate between four basic cadences now, adding [more specificity in a later chapter](#).

1. **Authentic Cadence (AC)**: a phrase ending with the chords V–I
2. **Plagal Cadence (PC)**: a phrase ending with the chords IV–I
3. **Deceptive Cadence (DC)**: a phrase ending with the chords V–vi
4. **Half Cadence (HC)**: a phrase ending on the V chord

7.4.1 Examples of Authentic Cadences

F B \flat /D F B \flat B \flat /D Gm C \flat 7/G \flat B \flat /F F7 B \flat

O'er the land — of the free and the home of the brave!

B \flat : V I/3rd V I I/3rd vi ii $^{\circ}$ 7/5th I/5th V 7 I

authentic
cadence



YT: LGvW6jHUHiY

Figure 7.4.1 Francis Scott Key and John Stafford Smith, “Star-Spangled Banner”

In the example above, the notes surrounded by parentheses are **non-chord tones**, which will be studied later. Also, there are **seventh chords** in this example, which we will study in the next chapter.

Here is another example ending with an authentic cadence.

B C \sharp F \sharp D \sharp m B C \sharp F \sharp

I want to hold your hand, ——— I want to hold your hand.

F \sharp : IV V I vi IV V I

authentic
cadence



YT: jenWdylTtzs

Figure 7.4.2 Lennon-McCartney, “I Want to Hold Your Hand”

7.4.2 Examples of Plagal Cadences

Here are examples with plagal cadences.

"Amazing Grace" Lyrics: John Newton, Harriet Beecher Stowe
Tune: "New Britain" (traditional)

G/B Em G/D G/D D7 G C G

Was blind, but now I see.
The hour I first be - lied.
And grace will lead me home.
Than when we first be - gun. A - MEN.

G: I/3rd vi I/5th I/5th V⁷ I IV I
plagal cadence

Figure 7.4.3

G C Em

I let you see the parts of me that weren't all that pret-ty And with
ev - - - 'ry touch you fixed them

G: I IV vi IV I
plagal cadence



YT: OpQFFLBMEPI

Figure 7.4.4 Pink, Bhasker, and Ruess, "Just Give Me a Reason"

G C G C G Cm G

A - - - men, A - - - men, A - - - men.

G: I IV I IV I iv I

implied plagal cadences



YT: PVjiKRfKpPI

Figure 7.4.5 Hozier-Byrne, “Take Me to Church”

7.4.3 Examples of Deceptive Cadences

Bb Cm/Eb Bb/F F7 Gm

don - ne ve - de - te s'io l'ho nel cor,

mp

Bb: I ii/3rd I/5th V7 vi

deceptive cadence



YT: 53geSxS8-Ak

Figure 7.4.6 Mozart, *The Marriage of Figaro*, “Voi che sapete”

F/C C F/C C Gsus Am7 G/B C F

True col - ors, true col - ors are beau - ti-ful like a rain - bow.

C: IV/5th I IV/5th I Vsus vi7 V/3rd I IV
deceptive cadence



YT: LPn0KFLbqX8

Figure 7.4.7 Kelly and Steinberg, “True Colors”

The following example, from the prelude to Act I of Richard Wagner’s opera *Tristan und Isolde*, is arguably one of the most famous deceptive cadences in the history of music.

a: V7 VI
deceptive cadence



YT: ghjz6D34HPQ

Figure 7.4.8 Wagner, *Tristan und Isolde*, Prelude to Act I

A deceptive cadence means V did not go to I. This means that “V to not-I” is technically a more correct description for a deceptive cadence than V-vi, which is the most common realization of “V to not-I.”

In the example below, V goes to IV/3rd.

D: I/5th V IV/3rd
deceptive cadence



YT: 1Qxrru15jfo

Figure 7.4.9 Mozart, *Ave Verum Corpus*, K. 618

7.4.4 Examples of Half Cadences

D: I ii⁷/3rd V V
half cadence
(phrase ends on V)



YT: TpPuLwtDQrY

Figure 7.4.10 Mozart, *Eine kleine Nachtmusik*, K. 525, I.

Em7 G A Bm Em7 G A

me I fall in love with you ev - 'ry sin-gle day — I just want to tell you I am — so hon-ey

D: ii⁷ IV V vi ii⁷ IV V
half cadence



YT: lp-E05I60KA

Figure 7.4.11 Sheeran and Wadge, “Thinking Out Loud”

You may encounter chords with no thirds in rock and pop music. If you encounter a chord that has only a root and fifth, label it with a “5” after the root in lead sheet labeling (e.g., B⁵, as in the next example).

Additionally, you may encounter **incomplete chords**, which are chords containing only the root and third but no fifth.

C#m A E B5

E: vi IV I V

C#m7 A B5

vi IV V

half cadence



Figure 7.4.12 Bieber, Blanco, and Sheeran, “Love Yourself”

7.5 Practice Exercises

- Label the following chords with lead sheet symbols (above) and Roman numerals (below).

Ex. E° 1. ____ 2. ____ 3. ____ 4. ____ 5. ____

Ex. d: ii° 1. E: ____ 2. e: ____ 3. b: ____ 4. c: ____ 5. A: ____

- Given the Roman numeral and key, write the key signature, notate the triad, and label the chord with a lead-sheet symbol (above).

Ex. F#m/A 1. ____ 2. ____ 3. ____

Ex. E: ii/3rd 1. f: V 2. D: IV/5th 3. bb: vii°

3. Label lead-sheet symbols above and Roman numerals below and analyze the type of cadence that ends the phrase.

(a) "Columbia, the Gem of the Ocean" ([YouTube](#))

"Columbia, the Gem of the Ocean"

David T. Shaw

Lead-sheet symbols: _____

Musical score for "Columbia, the Gem of the Ocean" in G major, common time. The score consists of a vocal line and a piano accompaniment. The vocal line begins with a whole note G4, followed by a half note A4, a quarter note B4, and a quarter note C5. The piano accompaniment features a steady eighth-note bass line in the left hand and chords in the right hand.

Roman numerals: G: 1 2 3 4 5 6

Cadence type: _____

(b) "Could You Be Loved" ([YouTube](#))

"Could You Be Loved"

Bob Marley

Musical score for "Could You Be Loved" in G major, 4/4 time. The score includes a vocal line and a piano accompaniment. The vocal line has lyrics: "Could you be loved ____ and be loved? ____". The piano accompaniment features a rhythmic bass line with eighth notes and chords in the right hand.

Cadence type: _____

Click [here](#) to download the homework.