Chords

Intervals, chord formulas, spellings in every key, chords in a key

INTERVALS

1 half step = 1 fret. Count up from the root. Shaded = the notes chords are built from.

Frets	0	1	2	3	4	5	6	7	8	9	10	11	12
Degree	**1**	♭2	2	**♭3**	**3**	4	**♭5**	**5**	♭6	6	**♭7**	**7**	8
Interval	Root	m2	M2	m3	M3	P4	TT	P5	m6	M6	m7	M7	Oct

CHORD FORMULAS

The 3rd decides major vs. minor. A plain "7" means ♭7; "maj7" means the natural 7.

Chord	Written (in C)	Formula	Half steps	Notes in C	Where it lives in a key
Major	C	1 3 5	4 + 3	C E G	I · IV · V of a major key
Minor	Cm	1 ♭3 5	3 + 4	C E♭ G	ii · iii · vi of a major key
Diminished	C° or Cdim	1 ♭3 ♭5	3 + 3	C E♭ G♭	vii° (major key) · ii° (minor key)
Dominant 7	C7	1 3 5 **♭7**	4 + 3 + 3	C E G **B♭**	V7 — wants to resolve to I
Major 7	Cmaj7 or CΔ7	1 3 5 **7**	4 + 3 + 4	C E G **B**	Imaj7 · IVmaj7 — smooth, jazzy
Minor 7	Cm7	1 ♭3 5 **♭7**	3 + 4 + 3	C E♭ G **B♭**	ii7 · iii7 · vi7
Half-diminished	Cm7♭5 or Cø7	1 ♭3 ♭5 **♭7**	3 + 3 + 4	C E♭ G♭ **B♭**	viiø7 (major key) · iiø7 (minor key)

CHORD SPELLINGS — ALL 12 ROOTS

Highlighted = the 7th added on top of the triad.

Root	Major · C	Minor · Cm	7 · C7	maj7 · Cmaj7	m7 · Cm7	m7♭5 · Cø7
C	C E G	C E♭ G	C E G **B♭**	C E G **B**	C E♭ G **B♭**	C E♭ G♭ **B♭**
D♭ / C♯	D♭ F A♭	C♯ E G♯	D♭ F A♭ **C♭**	D♭ F A♭ **C**	C♯ E G♯ **B**	C♯ E G **B**
D	D F♯ A	D F A	D F♯ A **C**	D F♯ A **C♯**	D F A **C**	D F A♭ **C**
E♭ / D♯	E♭ G B♭	E♭ G♭ B♭	E♭ G B♭ **D♭**	E♭ G B♭ **D**	E♭ G♭ B♭ **D♭**	D♯ F♯ A **C♯**
E	E G♯ B	E G B	E G♯ B **D**	E G♯ B **D♯**	E G B **D**	E G B♭ **D**
F	F A C	F A♭ C	F A C **E♭**	F A C **E**	F A♭ C **E♭**	F A♭ C♭ **E♭**
F♯	F♯ A♯ C♯	F♯ A C♯	F♯ A♯ C♯ **E**	F♯ A♯ C♯ **E♯**	F♯ A C♯ **E**	F♯ A C **E**
G	G B D	G B♭ D	G B D **F**	G B D **F♯**	G B♭ D **F**	G B♭ D♭ **F**
A♭ / G♯	A♭ C E♭	G♯ B D♯	A♭ C E♭ **G♭**	A♭ C E♭ **G**	G♯ B D♯ **F♯**	G♯ B D **F♯**
A	A C♯ E	A C E	A C♯ E **G**	A C♯ E **G♯**	A C E **G**	A C E♭ **G**
B♭ / A♯	B♭ D F	B♭ D♭ F	B♭ D F **A♭**	B♭ D F **A**	B♭ D♭ F **A♭**	A♯ C♯ E **G♯**
B	B D♯ F♯	B D F♯	B D♯ F♯ **A**	B D♯ F♯ **A♯**	B D F♯ **A**	B D F **A**

Diminished triad (°) = the first three notes of the m7♭5 column. Odd-looking names are the correct spelling of familiar frets: C♭ = B, E♯ = F.

A sharp and its flat twin (C♯ = D♭) are the same fret — the first note in each cell is the root you're spelling.

CHORDS IN A KEY

Upper case = major · lower case = minor · ° = diminished · ø = half-diminished (m7♭5)

Major key · pattern M m m M M m d · example C

No.	I	ii	iii	IV	V	vi	vii°
Triad	M	m	m	M	M	m	d
In C	C	Dm	Em	F	G	Am	B°
7th	**maj7**	**m7**	**m7**	**maj7**	**7**	**m7**	**m7♭5**
In C	Cmaj7	Dm7	Em7	Fmaj7	G7	Am7	Bm7♭5

Minor key · pattern m d M m m M M · example Am

No.	i	ii°	III	iv	v	VI	VII
Triad	m	d	M	m	m	M	M
In Am	Am	B°	C	Dm	Em	F	G
7th	**m7**	**m7♭5**	**maj7**	**m7**	**m7**	**maj7**	**7**
In Am	Am7	Bm7♭5	Cmaj7	Dm7	Em7	Fmaj7	G7

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Keys, scales & rhythm

Key signatures, scale patterns, progressions, rhythm

KEY SIGNATURES

Each step along the order of 5ths adds one sharp; along the order of 4ths adds one flat.

Order of 5ths	C 0	G 1♯	D 2♯	A 3♯	E 4♯	B 5♯	F♯ 6♯	C♯ 7♯
Rel. minor	Am	Em	Bm	F♯m	C♯m	G♯m	D♯m	A♯m
Adds sharp	—	F♯	C♯	G♯	D♯	A♯	E♯	B♯

Order of 4ths	C 0	F 1♭	B♭ 2♭	E♭ 3♭	A♭ 4♭	D♭ 5♭	G♭ 6♭	C♭ 7♭
Rel. minor	Am	Dm	Gm	Cm	Fm	B♭m	E♭m	A♭m
Adds flat	—	B♭	E♭	A♭	D♭	G♭	C♭	F♭

- Read the “adds” rows left to right: sharps go **F C G D A E B**, flats go **B E A D G C F** (same, backwards).
- Relative minor = 3 frets below the major root (or its 6th note). Same notes, same key signature.
- Sharp keys: the last sharp is a half step below the key (C♯ → D). Flat keys: the next-to-last flat is the key (B♭ E♭ A♭ → E♭).
- Same sound, two names: F♯ = G♭, C♯ = D♭, B = C♭.

SCALE PATTERNS

W = 2 frets · H = 1 fret

Major W W H W W W H

1	2	3	4	5	6	7	8
C	D	E	F	G	A	B	C
	W	W	H	W	W	H	

Natural minor W H W W H W W

1	2	♭3	4	5	♭6	♭7	8
A	B	C	D	E	F	G	A
	W	H	W	W	H	W	

The same step pattern works from any root. A minor is C major's notes started on the 6th — its relative minor. Scale degrees are the Nashville numbers; the ♭3, ♭6 and ♭7 are why minor-key chords differ.

COMMON PROGRESSIONS

Major examples in G, minor in Am

Numbers	Example	Sound
I – IV – V7	G – C – D7	Rock, country, folk
I – V – vi – IV	G – D – Em – C	Pop
I – vi – IV – V	G – Em – C – D	’50s ballad
ii7 – V7 – Imaj7	Am7 – D7 – Gmaj7	Jazz turnaround
i – iv – V7	Am – Dm – E7	Minor, strong pull home
i – VI – III – VII	Am – F – C – G	Minor rock / pop

12-BAR BLUES IN A

Every chord is a dominant 7 · last bar turns around

A7	I7	**A7**	I7	**A7**	I7	**A7**	I7
D7	IV7	**D7**	IV7	**A7**	I7	**A7**	I7
E7	V7	**D7**	IV7	**A7**	I7	**E7**	V7

NOTE & REST VALUES

Beats in 4/4 time

	Whole	Half	Quarter	Eighth	Sixteenth
Beats	**4**	**2**	**1**	**½**	**¼**
Note					
Rest					
Per bar	1	2	4	8	16
Count	1 2 3 4	1 2 3 4	1 2 3 4	1 & 2 &	1 e & a

RHYTHM EXTRAS

- **Dotted note** = the note plus half its value. Dotted half = 3 beats · dotted quarter = 1½ · dotted eighth = ¾.
- **Tie** = a curve joining two notes of the same pitch: play once, hold for both (quarter tied to quarter = 2 beats). Over different pitches it's a slur (hammer-on / pull-off).
- **Time signature**: top = beats per bar, bottom = the note that gets one beat (4 = quarter, 8 = eighth).

4 Common time (C)
4 Count 1 2 3 4

3 Waltz
4 Count 1 2 3

6 Six eighths
8 Felt as 2 beats: **1** 2 3 **4** 5 6

2 Cut time (¢)
2 2 half-note beats

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