

16-Tone Scale Generator and Analyzer Report

=====

Generates 16-elementary Scales that span two octaves, with additional properties. Here, the 16th element of the scale is the repeated root note transposed up by two octaves. This corresponds to the eight element of the prototypical C major scale: C D E F G A B *--> C <--*

We require that each consecutive 3 step intervals have at least one and at most 2 semi-tone steps; all 15 intervals must add up to 24 semi-tone steps. This should somehow evenly distribute the small steps.

Candidate count: 1215

Filtering out candidates that have three consecutive semi-tone steps.

Candidate count: 945

Filtering out all candidates that also contain the octave of the root.

Candidate count: 351

Filtering out all candidates with more than three steps that do not have their octave in the scale.

Candidate count: 31

Filtering out all candidates where two consecutive steps do not have their octave in the scale.

Candidate count: 23

Filtering out all candidates that have a diatonic modal scale as a sub-scale with possible additional steps inserted between them.

Candidate count: 15

Jan 22, 2021

Generated scales with the desired properties, up to rotation

=====

#	ID	Code	Steps	Has 8a?	xABCDEF
I	0	BFACA	FhFFhFFhFFhFFhF	.++++.++.+++++	2323212
II	1	CACDB	hFFFFhFFhFFhFFhF	.+++++.++.++++	2323212
III	2	ECABA	hFhhFFFFhFhFFhF	.+.+++++.+++++	3222222
IV	3	BDACA	FhFhhFFFFhFFhFFhF	.+++..+++..+++++	3222222
V	5	CBCAE	hFFFhFhFFFFhFhF	.+++++.+++++.+	3222222
VI	7	CACFB	hFFFFhFFhFFhFFhF	.+++++.+++..+++	3222222
VII	8	CDACA	hFFFhFFFFhFFhFFhF	.+++..+++..+++++	3303303
VIII	9	CFACA	hFFFhFFhFFhFFhFFhF	.++++.+++..+++++	3303303
IX	12	ECACA	hFhhFFFFhFFhFFhF	.++.+++++.+++++	4202313

I - 0

FhFFhFFhFFhFFh

Intervals:

```

8      .++++.++.+++++
3-     ++.+.+.+.+.+.
8+3-   ++...++++.+.+.
5      ++...+.+.+.+.
8+5    ++.+++...+.+.
7      ..+++..++++.+++
8+7    .+.++.+++..++++
3      ..+++..+++..+.
8+3    ..++++.++.++++
maj7   +++..+...+.+.+.
8+maj7 +.+.+.+.+.+.+.
6-     +.+++..++++.+++
8+6-   ..+.+.+++..++++
6      ++.+.+.+.+++..+
8+6    ++++.+.+.+.+.
4      +++..+.+.+.+.+.
8+4    ++..+.+.+.+.+.
b5     .+++++++..+.+.
8+b5   ..+.+.+++++++

```

Root-Notes:

Chord [#roots]

		G	A	A#	C	D	D#	E	F#	G#	A	A#	C	D	E	F#	G
		*	-	-	-	-	*	-	-	*	-	-	-	-	-	-	*
5	[7]	X	X	.	.	X	X	.	.	.	X	.	X	X	.	.	X
5+8	[5]	.	X	.	.	X	.	.	.	.	X	.	X	X	.	.	.
4	[8]	X	X	X	.	.	X	X	.	.	X	.	.	X	X	.	X
3m	[4]	X	X	.	.	.	X	.	.	.	X	.	.	.	.	.	X
3+	[3]	.	.	.	.	X	.	.	.	.	.	.	X	X	.	.	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	.	.	.	X	.	.	.	.	.	.	X	X	.	.	.
min7	[1]	.	.	.	.	.	.	.	.	.	X	.	.	.	.	X	.
b7	[6]	.	X	.	X	.	X	.	X	.	.	.	.	.	X	X	.
maj7-5	[3]	.	.	X	.	.	.	.	.	X	.	X	.	.	.	.	.
dom7-5	[9]	.	.	X	X	X	.	X	X	X	.	.	X	X	.	X	.
min7-5	[5]	.	.	.	X	.	.	.	X	.	X	.	.	.	X	X	.
8+5	[5]	.	X	.	X	X	.	.	.	.	X	.	.	X	.	.	.
8+4	[6]	.	X	.	.	X	.	X	.	.	X	X	.	.	X	.	.
8+3m	[2]	.	X	.	.	.	.	.	.	.	X	.	.	.	.	.	.
8+3+	[3]	.	.	.	X	X	.	.	.	.	.	.	.	X	.	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	X	X	.	.	.	.	.	.	.	X	.	.	.
8+min7	[1]	.	X	.	.	.	.	.	.	.	.	.	.	.	.	X	.
8+b7	[5]	.	.	.	.	.	.	X	X	.	X	.	X	.	.	X	.
8+maj7-5	[2]	.	.	X	.	.	.	.	.	.	.	X	.	.	.	.	.
8+dom7-5	[8]	.	.	.	X	X	.	.	X	.	.	X	X	X	X	X	.
8+min7-5	[5]	.	X	.	.	.	.	X	X	.	.	.	X	.	.	X	.

I - 1

hFFhhFFFFhFhFFh

Intervals:

```

8      .++.+++++.++++
3-     +.+.+.+.+++++.
8+3-   ++++.+.+.++++.
5      +...+.++.++.+.
8+5     +...+.+.+++++.
7      .++++.++++.+++
8+7     .++++.+++++.+.
3      .++++.+++++.+++
8+3     +.++.+++++.+++
maj7    +...+.+.+.+++..
8+maj7  ++...+.+.+.+.+.
6-     .++++.+.++++.+++
8+6-    .++++.+++++.+.+.
6      +...+++..+++++.
8+6     +.+.+.+.+++++.
4      ++...+.+.++++..
8+4     .+...+.+.+++++.
b5      ++++.++.++.++++
8+b5    ++++++++...+.

```

Root-Notes:

Chord	[#roots]	G	G#	A#	C	C#	D	E	F#	G#	A#	B	C#	D	E	F#	G
		*	-	-	*	-	-	-	-	-	-	*	-	-	-	-	*
5	[7]	X	.	.	.	X	.	X	X	.	.	X	X	.	.	X	X
5+8	[5]	.	.	.	.	X	.	X	X	.	.	.	X	.	.	X	.
4	[8]	X	X	.	.	X	.	.	X	X	.	X	X	X	.	.	X
3m	[4]	X	.	.	.	X	.	.	.	.	.	X	X	.	.	.	X
3+	[3]	.	.	.	.	.	.	X	X	.	.	.	.	.	.	X	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	.	.	.	.	.	X	X	.	.	.	.	.	.	X	.
min7	[1]	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
b7	[6]	X	.	X	.	.	.	.	.	X	X	.	X	.	X	.	X
maj7-5	[3]	.	.	.	X	.	X	.	.	.	.	.	.	X	.	.	.
dom7-5	[9]	.	X	X	X	.	.	X	X	.	X	.	.	X	X	X	.
min7-5	[5]	.	.	X	.	X	.	.	.	X	X	.	.	.	X	.	.
8+5	[5]	.	.	.	.	X	.	.	X	.	.	.	X	.	X	X	.
8+4	[6]	.	X	.	.	X	X	.	.	X	.	.	X	.	.	X	.
8+3m	[2]	.	.	.	.	X	.	.	.	.	.	.	X	.	.	.	.
8+3+	[3]	.	.	.	.	.	.	.	X	.	.	.	.	.	X	X	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	.	.	.	.	X	.	.	.	.	.	X	X	.
8+min7	[1]	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.
8+b7	[5]	.	X	X	.	X	.	X	.	.	X	.	.	.	.	.	.
8+maj7-5	[2]	.	.	.	.	.	X	.	.	.	.	.	.	X	.	.	.
8+dom7-5	[8]	.	.	X	.	.	X	X	X	X	X	.	.	.	X	X	.
8+min7-5	[5]	.	X	X	.	.	.	X	.	.	X	.	X	.	.	.	.

I - 2

hhFFFFhFhFFhhFF

Intervals:

```

8      .+++++.++++.++
3-     .+...+++++.+.+
8+3-   .+.+.++++.+++
5      .+.+.+.+.+.+.
8+5     ++.+.+.++++.
7      ++.++++.+.+.+.
8+7     +.+++++.+.+.+.
3      +.++++.+.+.+.+.
8+3     +.+++++.+++++.
maj7    +.+.+.+++++.+.
8+maj7  .++....+.+.+.+.
6-     +.+.+++++.++++.
8+6-    +.+++++.+.+.+.
6      .+++..++++.+.+.
8+6     .+.+.+.+++++.+.
4      .+..+++.++++.+.+.
8+4     .++..+.++.+.+.+.
b5      +.++.++.+++++++
8+b5    ++++++++..++.+++

```

Root-Notes:

Chord	[#roots]	G	G#	A	B	C#	D#	F	F#	G#	A	B	C#	D	D#	F	G
		*	-	-	-	-	-	-	*	-	-	-	-	*	-	-	*
5	[7]	.	X	.	X	X	.	.	X	X	.	.	X	X	.	.	.
5+8	[5]	.	X	.	X	X	.	.	.	X	.	.	X	.	.	.	.
4	[8]	.	X	.	.	X	X	.	X	X	X	.	.	X	X	.	.
3m	[4]	.	X	.	.	.	.	.	X	X	.	.	.	X	.	.	.
3+	[3]	.	.	.	X	X	.	.	.	.	.	.	X	.	.	.	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	.	.	X	X	.	.	.	.	.	.	X	.	.	.	.
min7	[1]	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
b7	[6]	.	.	.	.	.	X	X	.	X	.	X	.	X	.	X	.
maj7-5	[3]	X	.	X	.	.	.	.	.	.	X	.	.	.	.	.	X
dom7-5	[9]	X	.	.	X	X	.	X	.	.	X	X	X	.	X	X	X
min7-5	[5]	.	X	.	.	.	X	X	.	.	.	X	.	.	.	X	.
8+5	[5]	.	X	.	.	X	.	.	.	X	.	X	X	.	.	.	.
8+4	[6]	.	X	X	.	.	X	.	.	X	.	.	X	.	X	.	.
8+3m	[2]	.	X	.	.	.	.	.	.	X	.	.	.	.	.	.	.
8+3+	[3]	.	.	.	.	X	.	.	.	.	.	X	X	.	.	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	.	X	.	.	.	.	.	X	X	.	.	.	.
8+min7	[1]	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
8+b7	[5]	.	X	.	X	.	.	X	.	.	.	.	.	.	X	X	.
8+maj7-5	[2]	.	.	X	.	.	.	.	.	.	X	.	.	.	.	.	.
8+dom7-5	[8]	.	.	X	X	X	X	X	.	.	.	X	X	.	.	X	.
8+min7-5	[5]	.	.	.	X	.	.	X	.	X	.	.	.	.	X	X	.

II - 0

hFFFFhFFhFFhF

Intervals:

```

8      .+++++.++.++++
3-     +...+.+.+.+++
8+3-   ++.+++...+.+.+
5      +.+.++.+.+.+.+
8+5    +.++.+.+.+.+.+
7      ++++++.+.+.+++
8+7    +.++++.+++.+
3      .+++++.+++.+
8+3    +++++.+.+++
maj7   +...+.++++.+
8+maj7 +.....+.+.+.+
6-     .+++++.++.++++
8+6-   .+.+++.+
6      ++.+.+.+.+.+.+
8+6    +++.+.+.+.+.+
4      +.+.+.+.+.+.+
8+4    +.++.+.+.+.+.+
b5     .+++++.++++.
8+b5   .++.+.++++.

```

Root-Notes:

		G	G#	A#	C	D	E	F	F#	G#	A#	B	C	D	E	F	G
Chord	[#roots]	*	-	-	-	-	-	-	*	-	-	*	-	-	-	-	*
5	[7]	X	.	X	.	.	X	X	.	.	X	.	X	.	.	X	X
5+8	[6]	.	.	X	.	.	X	X	.	.	X	.	X	.	.	X	.
4	[8]	X	.	.	X	.	.	X	X	.	.	X	X	X	.	X	X
3m	[3]	X	.	.	.	.	.	X	.	.	.	.	.	.	.	X	X
3+	[4]	.	.	X	.	.	X	.	.	.	X	.	X	.	.	.	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[4]	.	.	X	.	.	X	.	.	.	X	.	X	.	.	.	.
min7	[1]	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X
b7	[6]	.	.	.	.	X	.	X	.	X	.	X	.	X	X	.	.
maj7-5	[3]	.	.	.	X	.	.	.	X	X	.	.	.	.	.	.	.
dom7-5	[9]	.	X	X	X	X	X	.	X	.	X	.	X	.	X	.	.
min7-5	[4]	X	.	.	.	X	.	.	.	.	.	.	.	X	X	.	X
8+5	[6]	.	.	X	X	.	.	X	.	.	X	.	.	.	X	X	.
8+4	[5]	.	.	.	X	X	.	X	.	.	.	.	X	.	.	X	.
8+3m	[2]	.	.	.	.	.	.	X	.	.	.	.	.	.	.	X	.
8+3+	[4]	.	.	X	X	.	.	.	.	.	X	.	.	.	X	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[4]	.	.	X	X	.	.	.	.	.	X	.	.	.	X	.	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[5]	.	X	.	.	X	X	.	.	.	.	.	X	.	X	.	.
8+maj7-5	[2]	.	X	.	.	.	.	.	.	.	.	.	X	.	.	.	.
8+dom7-5	[8]	.	.	X	X	.	X	.	.	X	X	.	X	X	X	.	.
8+min7-5	[3]	.	.	.	.	X	X	.	.	.	.	.	X	.	.	.	.

II - 1

FFhhFFhFhFFFFhh

=====

Intervals:

8	.++.++++.++++++
3-	.+.+.++++.++.+
8+3-	...+.+.++++.+++
5	..+.+.++.+.++.+
8+5	..++..++++.++.+
7	+.+.++++.++++++
8+7	+++..++++.++++.
3	+++..+.+.++++.
8+3	+++..++++.++++.
maj7	++.+.++++.++++.
8+maj7	++.++++.++++.
6-	++.++++.++++.
8+6-	+++..++++.++++.
6	.+++..++++.++++.
8+6	.+.+.++++.++++.
4	+.++++.++++.
8+4	...++++.++++.
b5	++++.++++.++++.
8+b5	+++++++.++++.

Root-Notes:

Chord	[#roots]	G	A	B	C	C#	D#	F	F#	G#	A	B	C#	D#	F	F#	G
		*	-	-	*	-	-	-	*	-	-	-	-	-	-	-	*
5	[7]	.	.	X	.	X	.	.	X	X	.	X	.	.	X	X	.
5+8	[6]	.	.	X	.	X	.	.	X	.	.	X	.	.	X	X	.
4	[8]	X	.	.	X	X	X	.	X	X	.	.	X	.	.	X	X
3m	[3]	.	.	.	.	.	.	.	X	X	.	.	.	.	.	X	.
3+	[4]	.	.	X	.	X	.	.	.	.	.	X	.	.	X	.	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[4]	.	.	X	.	X	.	.	.	.	.	X	.	.	X	.	.
min7	[1]	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.	.
b7	[6]	.	X	.	X	.	X	X	.	.	.	.	.	X	.	X	.
maj7-5	[3]	X	X	.	.	.	.	.	.	.	.	.	X	.	.	.	X
dom7-5	[9]	X	.	X	.	X	.	X	.	.	X	X	X	X	X	.	X
min7-5	[4]	.	.	.	.	.	X	X	.	X	.	.	.	X	.	.	.
8+5	[6]	.	.	X	.	.	.	X	X	.	.	X	X	.	.	X	.
8+4	[5]	.	.	.	.	X	.	.	X	.	.	.	X	X	.	X	.
8+3m	[2]	.	.	.	.	.	.	.	X	.	.	.	.	.	.	X	.
8+3+	[4]	.	.	X	.	.	.	X	.	.	.	X	X	.	.	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[4]	.	.	X	.	.	.	X	.	.	.	X	X	.	.	.	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[5]	.	.	.	.	.	X	.	X	.	X	.	.	X	X	.	.
8+maj7-5	[2]	.	.	.	.	X	.	.	.	.	X	.	.	.	.	.	.
8+dom7-5	[8]	.	X	X	.	X	X	X	.	.	.	X	X	.	X	.	.
8+min7-5	[3]	.	.	.	.	.	X	.	.	.	.	.	.	X	X	.	.

II - 2

hFFhFhFFFFhFFh

Intervals:

```

8      .++++.+++++.++
3-     +.++++...+.+.
8+3-   +.+.+++...+++..
5      .+...+.+.+.+.+
8+5    +...+++..+.+.+
7      .++++.+++++.+.+
8+7    .+++..+.++++.+++
3      .+.+.+.++++.+++
8+3    .+++..++++.+.+++
maj7   +...+...+...+...
8+maj7 ++...+.+.+.+.+.
6-     +++++..+++++.+.
8+6-   .+++..+.++++.+++
6      +...+++..+.+.+
8+6    +.+.++++...+.+.
4      +++.+.+.+.+.+.
8+4    ++..+.+.+.+.+.
b5     +.+.+.+++++.+++
8+b5   +++++.++.+.+++

```

Root-Notes:

Chord	[#roots]	G	G#	A#	C	C#	D#	E	F#	G#	A#	C	C#	D	E	F#	G
		*	-	-	-	*	-	-	-	-	-	-	-	*	-	-	*
5	[7]	.	X	.	.	X	X	.	X	.	.	X	X	.	.	X	.
5+8	[6]	.	X	.	.	X	.	.	X	.	.	X	X	.	.	X	.
4	[8]	X	X	X	.	X	X	.	.	X	.	.	X	X	.	.	X
3m	[3]	.	.	.	.	X	X	.	.	.	.	.	X	.	.	.	.
3+	[4]	.	X	.	.	.	.	.	X	.	.	X	.	.	.	X	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[4]	.	X	.	.	.	.	.	X	.	.	X	.	.	.	X	.
min7	[1]	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
b7	[6]	X	.	X	X	.	.	.	.	.	X	.	X	.	X	.	X
maj7-5	[3]	.	.	.	.	.	.	.	.	X	.	.	.	X	X	.	.
dom7-5	[9]	.	X	.	X	.	.	X	X	X	X	X	.	X	.	X	.
min7-5	[4]	.	.	X	X	.	X	.	.	.	X	.	.	.	.	.	.
8+5	[6]	.	.	.	X	X	.	.	X	X	.	.	X	.	.	X	.
8+4	[5]	.	X	.	.	X	.	.	.	X	X	.	X	.	.	.	.
8+3m	[2]	.	.	.	.	X	.	.	.	.	.	.	X	.	.	.	.
8+3+	[4]	.	.	.	X	.	.	.	X	X	.	.	.	.	.	X	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[4]	.	.	.	X	.	.	.	X	X	.	.	.	.	.	X	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[5]	.	.	X	.	X	.	X	.	.	X	X	.	.	.	.	.
8+maj7-5	[2]	.	X	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8+dom7-5	[8]	.	X	X	X	.	.	.	X	X	.	X	.	.	X	X	.
8+min7-5	[3]	.	.	X	.	.	.	.	.	.	X	X	.	.	.	.	.

III - 0

hFhhFFFFhFhFFFh

=====

Intervals:

8	.+.+++++.+++++
3-	++.+. . . .++++.+. .
8+3-	.+.+. . . .++++.+. .
5	+. . .+.+. .+++++. .
8+5	+. .+.+. .+++++. .
7	.++++.+++++.+++++
8+7	.++.+++++.+.+++
3	+++..+++..+.+++++
8+3	+++..+++++. .++++.
maj7	+.+.+. . .+++++. . .
8+maj7	++.++. . . .+.+. . .
6-	.++.+. .++++.+++++
8+6-	.+++++++++. .+.++
6	+. .++++. . .+.+. . .
8+6	+.++.+. . .+++++. .
4	+. .+. .+.+.+.+. .
8+4	+. .+.+.+.+.+.+. .
b5	.++.++.+. .+++++
8+b5	.++.+++++. .++++. .

Root-Notes:

Chord [#roots]

	G	G#	A#	B	C	D	E	F#	G#	A	B	C	D	E	F#	G
5 [8]	X	.	.	X	.	X	X	.	.	X	X	X	.	X	.	X
5+8 [6]	.	.	.	X	.	X	X	.	.	.	X	X	.	X	.	.
4 [8]	X	.	.	X	.	.	X	X	.	X	X	.	X	.	X	X
3m [5]	X	.	.	X	.	.	.	.	.	X	X	.	.	X	.	X
3+ [5]	X	.	.	.	.	X	X	.	.	.	.	X	.	X	.	X
maj7 [2]	X	.	.	.	.	.	.	.	.	.	.	X	.	.	.	X
dom7 [4]	.	.	.	.	.	X	X	.	.	.	.	X	.	X	.	.
min7 [3]	.	.	.	X	.	.	.	.	.	X	.	.	.	X	.	.
b7 [4]	.	X	.	.	.	.	.	X	X	.	.	.	.	X	.	.
maj7-5 [5]	X	.	X	.	X	.	.	.	X	.	.	X	.	.	.	X
dom7-5 [9]	.	X	X	.	.	X	X	.	X	.	.	X	X	X	X	.
min7-5 [6]	.	X	.	X	.	.	.	X	X	X	.	.	.	X	.	.
8+5 [6]	.	.	.	X	X	.	X	.	.	.	X	.	X	X	.	.
8+4 [6]	.	.	.	X	.	X	.	X	.	.	X	.	.	X	X	.
8+3m [3]	.	.	.	X	.	.	X	.	.	.	X	.	.	.	.	.
8+3+ [4]	.	.	.	.	X	.	X	.	.	.	.	.	X	X	.	.
8+maj7 [1]	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
8+dom7 [4]	.	.	.	.	X	.	X	.	.	.	.	X	X	.	.	.
8+min7 [2]	.	.	.	.	.	.	X	.	.	.	X	.	.	.	.	.
8+b7 [4]	.	X	.	.	.	.	X	.	X	.	.	.	.	.	X	.
8+maj7-5 [3]	.	X	.	.	X	.	.	.	.	.	.	X	.	.	.	.
8+dom7-5 [8]	.	X	.	.	X	X	X	X	X	.	.	.	X	X	.	.
8+min7-5 [5]	.	X	.	.	.	.	X	.	X	.	X	.	.	.	X	.

III - 1

hhFFFFhFhFFFhhF

=====

Intervals:

8	.+++++.++++.+
3-	.+...++++..+.++
8+3-	.+...+.++++..+.+
5	.+.++..++++.+.+
8+5	.++.+.++.+++.+
7	++.+++++.++++.+
8+7	+.+++++.++++.+
3	+.++++.+.++++++
8+3	+.+++++.++++.++
maj7	+.+.++++.+.+
8+maj7	.++.....+.+.++
6-	+.+.++++.+++++.+
8+6-	+++++++.+.+++.
6	.+++...++.+.+.+
8+6	++.+.+.++++.+.+
4	.+...++.++.+.++.
8+4	.+.+.+.++.+.++.
b5	+.++.++..++++.+
8+b5	+.+++++.++++.++

Root-Notes:

		G	G#	A	B	C#	D#	F	F#	G#	A	B	C#	D#	E	F	G
Chord	[#roots]	*	-	-	-	-	-	-	*	-	-	-	-	-	*	-	*
5	[8]	.	X	.	X	X	.	.	X	X	X	.	X	.	X	.	.
5+8	[6]	.	X	.	X	X	.	.	.	X	X	.	X	.	.	.	.
4	[8]	.	X	.	.	X	X	.	X	X	.	X	.	X	X	.	.
3m	[5]	.	X	.	.	.	.	.	X	X	.	.	X	.	X	.	.
3+	[5]	.	.	.	X	X	.	.	.	.	X	.	X	.	X	.	.
maj7	[2]	.	.	.	.	.	.	.	.	.	X	.	.	.	X	.	.
dom7	[4]	.	.	.	X	X	.	.	.	.	X	.	X	.	.	.	.
min7	[3]	.	X	.	.	.	.	.	X	.	.	.	X	.	.	.	.
b7	[4]	.	.	.	.	.	X	X	.	.	.	.	X	.	.	X	.
maj7-5	[5]	X	.	X	.	.	.	X	.	.	X	.	.	.	X	.	X
dom7-5	[9]	X	.	.	X	X	.	X	.	.	X	X	X	X	.	X	X
min7-5	[6]	.	X	.	.	.	X	X	X	.	.	.	X	.	.	X	.
8+5	[6]	.	X	X	.	X	.	.	.	X	.	X	X	.	.	.	.
8+4	[6]	.	X	.	X	.	X	.	.	X	.	.	X	X	.	.	.
8+3m	[3]	.	X	.	.	X	.	.	.	X	.	.	.	.	.	.	.
8+3+	[4]	.	.	X	.	X	.	.	.	.	.	X	X	.	.	.	.
8+maj7	[1]	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[4]	.	.	X	.	X	.	.	.	.	.	X	X	.	.	.	.
8+min7	[2]	.	.	.	.	X	.	.	.	X	.	.	.	.	.	.	.
8+b7	[4]	.	.	.	.	X	.	X	.	.	.	.	.	X	.	X	.
8+maj7-5	[3]	.	.	X	.	.	.	.	.	.	X	.	.	.	.	X	.
8+dom7-5	[8]	.	.	X	X	X	X	X	.	.	.	X	X	.	.	X	.
8+min7-5	[5]	.	.	.	.	X	.	X	.	X	.	.	.	X	.	X	.

III - 2

FhFFFhFhFFFh

Intervals:

```

8      .+++++.+.+++++
3-     ++..+.++.+.+.+
8+3-   ++..+.+.+.+.+
5      ++++.+.+.+.+.
8+5     ++.++.+.+.+.
7      +.++++.+++..+++
8+7     .+.+++..+++
3      ..+++++.+++..+
8+3     ..+++..+++
maj7    +++..+.+.+.+.
8+maj7  +.+.+++..+++
6-     .+++++.++.+.+++
8+6-    ..+.++.+++++++
6      ++.+.+.+.+++..
8+6     ++++.+.+.+.+.
4      ++.+.+++..+.+.
8+4     ++..+++..+.+.
b5      ..++++.+++..++
8+b5    ..+++..+++..+++

```

Root-Notes:

Chord [#roots]

	G	A	A#	C	D	E	F	F#	G#	A	A#	C	D	E	F#	G
5 [8]	X	X	X	.	X	.	X	.	.	X	.	X	X	.	.	X
5+8 [6]	.	X	X	.	X	.	.	.	.	X	.	X	X	.	.	.
4 [8]	X	X	.	X	.	X	X	.	.	X	.	.	X	X	.	X
3m [5]	X	X	.	.	X	.	X	.	.	X	.	.	.	.	.	X
3+ [5]	.	.	X	.	X	.	X	.	.	.	.	X	X	.	.	.
maj7 [2]	.	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.
dom7 [4]	.	.	X	.	X	.	.	.	.	.	.	X	X	.	.	.
min7 [3]	X	.	.	.	X	.	.	.	.	X	.	.	.	.	.	X
b7 [4]	.	.	.	.	X	.	.	X	.	.	.	.	.	X	X	.
maj7-5 [5]	.	.	X	.	.	.	X	.	X	.	X	.	.	.	X	.
dom7-5 [9]	.	.	X	X	X	X	.	X	X	.	.	X	X	.	X	.
min7-5 [6]	X	.	.	.	X	.	.	X	.	X	.	.	.	X	X	X
8+5 [6]	.	X	.	X	X	.	.	.	.	X	X	.	X	.	.	.
8+4 [6]	.	X	.	.	X	X	.	.	.	X	.	X	.	X	.	.
8+3m [3]	.	X	.	.	.	.	.	.	.	X	.	.	X	.	.	.
8+3+ [4]	.	.	.	X	X	.	.	.	.	.	X	.	X	.	.	.
8+maj7 [1]	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
8+dom7 [4]	.	.	.	X	X	.	.	.	.	.	X	.	X	.	.	.
8+min7 [2]	.	X	.	.	.	.	.	.	.	.	.	.	X	.	.	.
8+b7 [4]	.	.	.	.	.	X	.	X	.	.	.	.	X	.	X	.
8+maj7-5 [3]	.	.	X	.	.	.	.	X	.	.	X	.	.	.	.	.
8+dom7-5 [8]	.	.	.	X	X	.	.	X	.	.	X	X	X	X	X	.
8+min7-5 [5]	.	X	.	.	.	X	.	X	.	.	.	.	X	.	X	.

IV - 0

FhFhhFFFhhFFFFh

Intervals:

```

8      .+++ .+++ .+++++
3-     +++ .+.+.+.+.+.
8+3-   ++.+.+.+.+.+.
5      ++.+.+.+.+.+.
8+5     ++.+.+.+.+.+.
7      ..+.+.+++++.++++
8+7     .+.+.+++++.++++
3      .+++ .+++ .+++ .+
8+3     ..+.+.+++++.++++
maj7    +++ .+.+.+.+.+.
8+maj7  +.+.+.+.+.+.
6-     ..+++++.+.+++
8+6-    ..+.+++++.++++
6      ++.+.+.+.+.+.
8+6     +++++.+.+.+.+.
4      ++.+.+.+.+.+.
8+4     ++.+.+.+.+.+.
b5      +.+.+.+++++.+.
8+b5    ..+.+.+++++.++++

```

Root-Notes:

Chord [#roots]

	G	A	A#	C	C#	D	E	F#	G#	A	A#	C	D	E	F#	G
	*	-	-	*	-	-	-	*	-	-	-	-	-	-	-	*
5 [8]	X	X	.	.	X	X	.	.	.	X	.	X	X	.	X	X
5+8 [6]	.	X	.	.	.	X	.	.	.	X	.	X	X	.	X	.
4 [7]	X	X	.	.	X	.	X	.	.	X	.	.	X	X	.	X
3m [5]	X	X	.	.	X	.	.	.	.	X	.	.	.	.	X	X
3+ [5]	.	X	.	.	.	X	.	.	.	.	.	X	X	.	X	.
maj7 [2]	.	X	.	.	.	.	.	.	.	.	.	.	X	.	.	.
dom7 [4]	.	.	.	.	.	X	.	.	.	.	.	X	X	.	X	.
min7 [2]	.	.	.	.	.	.	.	.	.	X	.	.	.	.	X	.
b7 [5]	X	.	X	.	.	.	.	X	.	.	.	.	.	X	X	X
maj7-5 [5]	.	X	X	.	.	.	.	.	X	.	X	.	X	.	.	.
dom7-5 [9]	.	.	X	X	.	X	X	X	X	.	.	X	X	.	X	.
min7-5 [5]	.	.	X	.	.	.	.	X	.	X	.	.	.	X	X	.
8+5 [6]	.	X	.	X	.	X	.	X	.	X	.	.	X	.	.	.
8+4 [5]	.	X	.	.	.	X	X	.	.	X	.	.	.	X	.	.
8+3m [3]	.	X	.	.	.	.	.	X	.	X	.	.	.	.	.	.
8+3+ [5]	.	.	.	X	.	X	.	X	.	X	.	.	X	.	.	.
8+maj7 [2]	.	.	.	.	.	X	.	.	.	X	.	.	.	.	.	.
8+dom7 [4]	.	.	.	X	.	X	.	X	.	.	.	.	X	.	.	.
8+min7 [2]	.	X	.	.	.	.	.	X	.	.	.	.	.	.	.	.
8+b7 [4]	.	.	.	.	.	.	X	X	.	.	X	.	.	.	X	.
8+maj7-5 [4]	.	.	X	.	.	X	.	.	.	X	X	.	.	.	.	.
8+dom7-5 [8]	.	.	.	X	.	X	.	X	.	.	X	X	X	X	X	.
8+min7-5 [5]	.	X	.	.	.	.	X	X	.	.	X	.	.	.	X	.

IV - 1

hFFFhhFFFFhFhFh

Intervals:

8	.+++ .+++++ .+++
3-	+..+.+.+.++++.
8+3-	+.++.+.+.++++.
5	++.+.+.+.++++.
8+5	.+.+.+.+.++++.
7	.+++++.++++.++
8+7	.+++++.++++.+.+
3	.+++++.++++.+++
8+3	.+.+++++++..++
maj7	+...+.+.++++.
8+maj7	++.+.+.+.++++.
6-	+++++.+.+++..++
8+6-	+++++.+++++.+.+
6	+...+.++++.+++.
8+6	+.+.+.+.++++.
4	+.+.+.+.++++.
8+4	++++.+.+.++++.
b5	.+++++.+++..++
8+b5	+.++++.++++.++

Root-Notes:

Chord	[#roots]	G	G#	A#	C	D	D#	E	F#	G#	A#	C	C#	D#	E	F#	G
		*	-	-	*	-	-	-	-	-	-	-	*	-	-	-	*
5	[8]	X	X	.	.	.	X	.	X	X	.	X	X	X	.	.	X
5+8	[6]	.	X	.	.	.	X	.	X	X	.	X	.	X	.	.	.
4	[7]	X	.	X	.	.	X	.	.	X	X	.	X	X	.	.	X
3m	[5]	X	.	.	.	.	X	.	.	.	.	X	X	X	.	.	X
3+	[5]	.	X	.	.	.	.	.	X	X	.	X	.	X	.	.	.
maj7	[2]	.	.	.	.	.	.	.	.	X	.	.	.	X	.	.	.
dom7	[4]	.	X	.	.	.	.	.	X	X	.	X	.	.	.	.	.
min7	[2]	.	.	.	.	.	X	.	.	.	.	X	.	.	.	.	.
b7	[5]	.	.	.	X	.	.	.	.	.	X	X	X	.	X	.	.
maj7-5	[5]	.	.	.	.	X	.	X	.	X	.	.	.	X	X	.	.
dom7-5	[9]	.	X	X	X	X	.	.	X	X	.	X	.	.	X	X	.
min7-5	[5]	.	.	.	X	.	X	.	.	.	X	X	.	.	X	.	.
8+5	[6]	.	X	.	X	.	X	.	.	X	.	.	.	X	.	X	.
8+4	[5]	.	X	X	.	.	X	.	.	.	X	.	.	X	.	.	.
8+3m	[3]	.	.	.	X	.	X	.	.	.	.	.	.	X	.	.	.
8+3+	[5]	.	X	.	X	.	X	.	.	X	.	.	.	.	.	X	.
8+maj7	[2]	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
8+dom7	[4]	.	X	.	X	.	.	.	.	X	.	.	.	.	.	X	.
8+min7	[2]	.	.	.	X	.	.	.	.	.	.	.	.	X	.	.	.
8+b7	[4]	.	.	X	X	.	.	X	.	.	.	X	.	.	.	.	.
8+maj7-5	[4]	.	X	.	.	.	X	X	.	.	.	.	.	.	X	.	.
8+dom7-5	[8]	.	X	.	X	.	.	X	X	X	X	X	.	.	.	X	.
8+min7-5	[5]	.	.	X	X	.	.	X	.	.	.	X	.	X	.	.	.

IV - 2

hhFFFFhFhFhhFFF

Intervals:

8	.+++++.+++.
3-	.+...+++++.+.+
8+3-	.++...+++..+.+
5	.+.+.++++.++.
8+5	.+...+.+++.+.+
7	++.++++.++.++
8+7	+.+++++.+.++
3	+.++++.++++.
8+3	+++++++..++.
maj7	+.+.+.++++.
8+maj7	.++....+.+++.
6-	+.+.+++..++++.
8+6-	+.+++++.+.++++
6	.+++++.+.+++.
8+6	.+.+.+++++.+
4	.+...+.+++.
8+4	++...+.+++.
b5	+.++.++++.+++.
8+b5	+.+++++.++++.

Root-Notes:

Chord	[#roots]	G	G#	A	B	C#	D#	F	F#	G#	A	B	C	C#	D#	F	G
		*	-	-	-	-	-	*	-	-	-	-	*	-	-	-	*
5	[8]	.	X	.	X	X	.	X	X	X	.	.	X	X	.	.	.
5+8	[6]	.	X	.	X	X	.	X	.	X	.	.	.	X	.	.	.
4	[7]	.	X	.	.	X	X	.	X	X	.	.	X	.	X	.	.
3m	[5]	.	X	.	.	.	.	X	X	X	.	.	X	.	.	.	.
3+	[5]	.	.	.	X	X	.	X	.	X	.	.	.	X	.	.	.
maj7	[2]	.	.	.	.	X	.	.	.	X	.	.	.	.	.	.	.
dom7	[4]	.	.	.	X	X	.	X	.	.	.	.	.	X	.	.	.
min7	[2]	.	X	.	.	.	.	X	.	.	.	.	.	.	.	.	.
b7	[5]	.	.	.	.	.	X	X	X	.	X	.	.	.	.	X	.
maj7-5	[5]	X	.	X	.	X	.	.	.	X	X	.	.	.	.	.	X
dom7-5	[9]	X	.	.	X	X	.	X	.	.	X	X	.	X	X	X	X
min7-5	[5]	.	X	.	.	.	X	X	.	.	X	.	.	.	.	X	.
8+5	[6]	.	X	.	.	X	.	.	.	X	.	X	.	X	.	X	.
8+4	[5]	.	X	.	.	.	X	.	.	X	.	.	.	X	X	.	.
8+3m	[3]	.	X	.	.	.	.	.	.	X	.	.	.	.	.	X	.
8+3+	[5]	.	X	.	.	X	.	.	.	.	.	X	.	X	.	X	.
8+maj7	[2]	.	X	.	.	.	.	.	.	.	.	.	.	X	.	.	.
8+dom7	[4]	.	.	.	.	X	.	.	.	.	.	X	.	X	.	X	.
8+min7	[2]	.	.	.	.	.	.	.	.	X	.	.	.	.	.	X	.
8+b7	[4]	.	.	X	.	.	.	X	.	.	.	.	.	.	X	X	.
8+maj7-5	[4]	.	X	X	.	.	.	.	.	.	X	.	.	X	.	.	.
8+dom7-5	[8]	.	.	X	X	X	X	X	.	.	.	X	.	X	.	X	.
8+min7-5	[5]	.	.	X	.	.	.	X	.	X	.	.	.	.	X	X	.

V - 0

hFFFhFhFFFFhhFh

Intervals:

```

8      .+++++.+++++.+
3-     +..++++...+.++.
8+3-   +..+.++...+++..
5      +++..+++.+.+.+.
8+5     ++.+.++.++..+.
7      +++++.+++++.+.
8+7     .++++.+.++++.++
3      .++.+.+++++++
8+3     .+++++.++++.++
maj7    +....+++.+++
8+maj7  ++...+.+.+++
6-     +.+++..+++++.++
8+6-    +++++.+.++++.
6      .+...++++.+.+.+
8+6     +.+.++++...+.+
4      +.++.++..+.++.
8+4     +.+.+++..+.+.
b5      .+.+++..+++++.++
8+b5    .++++.+.++++.

```

Root-Notes:

		G	G#	A#	C	D	D#	F	F#	G#	A#	C	D	D#	E	F#	G
Chord	[#roots]	*	-	-	-	-	-	*	-	-	-	-	-	-	*	-	*
5	[8]	X	X	X	.	.	X	X	.	X	.	X	.	X	.	.	X
5+8	[6]	.	X	X	.	.	X	.	.	X	.	X	.	X	.	.	.
4	[8]	X	.	X	X	.	X	X	.	.	X	.	X	X	.	.	X
3m	[5]	X	.	.	.	.	X	X	.	.	.	X	.	X	.	.	X
3+	[5]	.	X	X	.	.	.	.	.	X	.	X	.	X	.	.	.
maj7	[2]	.	.	.	.	.	.	.	.	X	.	.	.	X	.	.	.
dom7	[4]	.	X	X	.	.	.	.	.	X	.	X	.	.	.	.	.
min7	[3]	X	.	.	.	.	.	X	.	.	.	X	.	.	.	.	X
b7	[4]	.	.	.	X	X	.	.	.	.	.	X	.	.	X	.	.
maj7-5	[4]	.	.	.	.	.	.	.	.	X	.	.	.	X	X	X	.
dom7-5	[9]	.	X	X	.	X	.	.	X	X	X	X	X	.	X	.	.
min7-5	[6]	X	.	.	X	X	.	X	.	.	.	X	.	.	X	.	X
8+5	[6]	.	X	.	X	.	X	.	.	X	X	.	.	X	.	.	.
8+4	[6]	.	.	X	.	X	X	.	.	.	X	X	.	X	.	.	.
8+3m	[3]	.	.	.	X	.	X	.	.	.	.	.	.	X	.	.	.
8+3+	[5]	.	X	.	X	.	X	.	.	X	X	.	.	.	.	.	.
8+maj7	[2]	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
8+dom7	[4]	.	X	.	X	.	.	.	.	X	X	.	.	.	.	.	.
8+min7	[1]	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	.	.	X	.	.	.	.	.	.	X	X	.	.	.	.
8+maj7-5	[3]	.	X	.	.	.	X	.	X	.	.	.	.	.	.	.	.
8+dom7-5	[8]	.	X	X	X	X	.	.	.	X	X	.	X	.	.	X	.
8+min7-5	[3]	.	.	.	X	.	.	.	.	.	.	X	X	.	.	.	.

V - 1

hFFFFhFhFhFFFFhF

Intervals:

```

8      .+++++.+.+++++
3-     +...+.++.+.+++
8+3-   +...+++..+.+.+
5      +.+.+.+.+++++.
8+5    +.++.+.+++++.+
7      ++++++.+.+++++.
8+7    +.++++.++.+++++.
3      .++++++++.+.+.
8+3    .++++.++.+++++
maj7   +.+...+++++...+
8+maj7 +.....+++.++...+
6-     .+++++.+++..+++
8+6-   .+.+++..+++++++
6      ++.+.+.+.+.+.+.
8+6    +++...+.++.+.+.+
4      +..+.++.+.++.+.
8+4    +..++.+.+.++.+.
b5     .+++++.++.+.++.
8+b5   .++.++.++.+++++.

```

Root-Notes:

		G	G#	A#	C	D	E	F	F#	G#	A	A#	C	D	E	F	G
Chord	[#roots]	*	-	-	-	-	-	-	*	-	*	-	-	-	-	-	*
5	[8]	X	.	X	.	X	.	X	.	.	X	X	X	.	.	X	X
5+8	[6]	.	.	X	.	X	.	X	.	.	.	X	X	.	.	X	.
4	[8]	X	.	.	X	.	X	X	.	.	X	.	X	X	.	X	X
3m	[5]	X	.	.	.	X	.	X	.	.	X	.	.	.	.	X	X
3+	[5]	.	.	X	.	X	.	X	.	.	.	X	X	.	.	.	.
maj7	[2]	.	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.
dom7	[4]	.	.	X	.	X	.	.	.	.	.	X	X	.	.	.	.
min7	[3]	X	.	.	.	X	.	.	.	.	X	.	.	.	.	.	X
b7	[4]	.	.	.	.	X	.	.	X	.	.	.	.	X	X	.	.
maj7-5	[4]	.	.	X	.	.	.	X	X	X	.	.	.	.	.	.	.
dom7-5	[9]	.	X	X	X	X	X	.	X	.	.	X	X	.	X	.	.
min7-5	[6]	X	.	.	.	X	.	.	X	.	X	.	.	X	X	.	X
8+5	[6]	.	.	X	X	.	.	X	.	.	.	X	.	X	.	X	.
8+4	[6]	.	.	.	X	X	.	X	.	.	.	.	X	.	X	X	.
8+3m	[3]	.	.	.	.	.	.	X	.	.	.	.	.	X	.	X	.
8+3+	[5]	.	.	X	X	.	.	.	.	.	.	X	.	X	.	X	.
8+maj7	[2]	.	.	.	.	.	.	.	.	.	.	X	.	.	.	X	.
8+dom7	[4]	.	.	X	X	.	.	.	.	.	.	X	.	X	.	.	.
8+min7	[1]	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
8+b7	[3]	.	.	.	.	X	X	.	.	.	.	.	.	X	.	.	.
8+maj7-5	[3]	.	X	.	.	.	.	.	.	.	.	X	.	.	.	X	.
8+dom7-5	[8]	.	.	X	X	.	X	.	.	X	.	X	X	X	X	.	.
8+min7-5	[3]	.	.	.	.	X	X	.	.	.	.	.	.	X	.	.	.

V - 2

FhhFFFhFhFFFFhh

Intervals:

```

8      .+.+++++.+++++.
3-     +.+. .++++. .+.+
8+3-   ..+.+.+.+.+.+.
5      ..+++. .+++.+.+.
8+5     ..+++.+.+.+.+.
7      +.+++++.+++++.
8+7     ++.+++++.+++++.
3      ++.+.+. .+++++.
8+3     ++.+++++.+++++.
maj7    +++.....+.+.+.
8+maj7  +.++.....+.+.+.
6-     ++++.+++..+++++.
8+6-    ++++++. .+.++++.
6      .+.+. .+++.+.+.
8+6     .+++.+. .++++. .+.
4      ..+.++.+.+.+.+.
8+4     ..+.+.++++.+.+.+.
b5      ++.+.++. .+++++.
8+b5    ++.++++. .+++.+.

```

Root-Notes:

Chord	[#roots]	G	A	A#	B	C#	D#	F	F#	G#	A	B	C#	D#	F	F#	G
		*	-	*	-	-	-	-	-	*	-	-	-	-	-	-	*
5	[8]	.	.	X	X	X	.	.	X	X	.	X	.	X	.	X	.
5+8	[6]	.	.	.	X	X	.	.	X	.	.	X	.	X	.	X	.
4	[8]	.	.	X	.	X	X	.	X	X	.	.	X	.	X	X	.
3m	[5]	.	.	X	.	.	.	.	X	X	.	.	.	X	.	X	.
3+	[5]	.	.	.	X	X	.	.	.	.	.	X	.	X	.	X	.
maj7	[2]	.	.	.	.	.	.	.	.	.	.	X	.	.	.	X	.
dom7	[4]	.	.	.	X	X	.	.	.	.	.	X	.	X	.	.	.
min7	[3]	.	.	X	.	.	.	.	.	X	.	.	.	X	.	.	.
b7	[4]	X	.	.	.	.	X	X	.	.	.	.	.	X	.	.	X
maj7-5	[4]	X	X	.	.	.	.	.	.	.	.	X	.	.	.	X	X
dom7-5	[9]	X	.	.	X	X	.	X	.	.	X	X	X	X	X	.	X
min7-5	[6]	X	.	X	.	.	X	X	.	X	.	.	.	X	.	.	X
8+5	[6]	.	.	.	X	.	X	.	X	.	.	X	X	.	.	X	.
8+4	[6]	.	.	.	.	X	.	X	X	.	.	.	X	X	.	X	.
8+3m	[3]	.	.	.	.	.	X	.	X	.	.	.	.	.	.	X	.
8+3+	[5]	.	.	.	X	.	X	.	X	.	.	X	X	.	.	.	.
8+maj7	[2]	.	.	.	X	.	.	.	X	.	.	.	.	.	.	.	.
8+dom7	[4]	.	.	.	X	.	X	.	.	.	.	X	X	.	.	.	.
8+min7	[1]	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	.	.	.	.	X	.	.	.	.	.	.	X	X	.	.
8+maj7-5	[3]	.	.	.	X	.	.	.	X	.	X	.	.	.	.	.	.
8+dom7-5	[8]	.	X	.	X	X	X	X	.	.	.	X	X	.	X	.	.
8+min7-5	[3]	.	.	.	.	.	X	.	.	.	.	.	.	X	X	.	.

VI - 0

hFFFFhhFFFhhFhF

Intervals:

```

8      .+++++.+++.+
3-     +...+.+...+.
8+3-   +.+.+++...+.+
5      +.+.+.+.+.+.
8+5    +.+.+.+.+.+.
7      ++++++.+.+.+.
8+7    +.++++.++++.+.
3      .+++++.++++.+.
8+3    .++++.+++++.+.
maj7   +...+.++++.+.
8+maj7 +.....+.+.+.
6-     .+++++.+.+.+.
8+6-   .+.++++.++++.
6      ++...+.+.+.+.
8+6    +++...+.+.+.+.
4      +..+.+.+.+.+.
8+4    ++.++.+.+.+.+.
b5     .+++++.++++.+.
8+b5   ++++.+.++++.+.

```

Root-Notes:

		G	G#	A#	C	D	E	F	F#	G#	A#	C	C#	D	E	F	G
Chord	[#roots]	*	-	-	-	-	-	*	-	-	-	-	*	-	-	-	*
5	[8]	X	.	X	.	.	.	X	X	.	X	X	X	.	.	X	X
5+8	[5]	.	.	X	.	.	.	X	.	.	X	X	.	.	.	X	.
4	[7]	X	.	.	X	.	.	X	.	X	.	X	.	X	.	X	X
3m	[5]	X	.	.	.	.	.	X	.	.	X	.	X	.	.	X	X
3+	[5]	.	.	X	.	.	.	.	X	.	X	X	X	.	.	.	.
maj7	[2]	.	.	.	.	.	.	.	X	.	.	.	X	.	.	.	.
dom7	[4]	.	.	X	.	.	.	.	X	.	X	X	.	.	.	.	.
min7	[2]	X	.	.	.	.	.	.	.	.	X	.	.	.	.	.	X
b7	[5]	.	.	.	.	X	.	.	.	.	X	.	X	X	X	.	.
maj7-5	[4]	.	.	.	.	X	.	.	X	X	.	.	X	.	.	.	.
dom7-5	[9]	.	X	X	X	X	X	.	X	.	X	X	.	.	X	.	.
min7-5	[5]	X	.	.	.	X	.	.	.	.	X	.	.	X	X	.	X
8+5	[5]	.	.	X	X	.	.	X	.	.	X	.	.	.	.	X	.
8+4	[6]	.	X	.	X	X	.	X	.	.	.	X	.	.	.	X	.
8+3m	[3]	.	.	X	.	.	.	X	.	.	.	.	.	.	.	X	.
8+3+	[3]	.	.	X	X	.	.	.	.	.	X	.	.	.	.	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	X	X	.	.	.	.	.	X	.	.	.	.	.	.
8+min7	[1]	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[4]	.	.	X	.	X	X	.	.	.	.	.	.	X	.	.	.
8+maj7-5	[2]	.	X	.	.	.	.	.	.	.	.	.	.	X	.	.	.
8+dom7-5	[8]	.	.	X	X	.	X	.	.	X	X	X	.	X	X	.	.
8+min7-5	[4]	.	.	X	.	X	X	.	.	.	.	.	.	X	.	.	.

VI - 1

FFFhhFhFhFFFFhh

Intervals:

```

8      .+++ .+++ .+++++
3-     ..+.+++++...+.+
8+3-   ....++ .++ .+++
5      +.+++ .++ .+++
8+5     ..+.+ .++ .+++
7      +.++ .++ .+++++
8+7     ++++ .++ .++++
3      ++++ .+ .++++
8+3     ++++++ .+++.+
maj7    ++..+ .++ .+++
8+maj7  +...++ .+ .+++
6-     ++.+.++ .+++++
8+6-    ++++ .+++ .+++
6       .+++.+ .+++
8+6     .+..+ .+++++
4       .+.+.+ .+++
8+4     ...++ .+++
b5      +++ .+++
8+b5    ++++ .+++.++

```

Root-Notes:

Chord [#roots]

	G	A	B	C#	D	D#	F	F#	G#	A	B	C#	D#	F	F#	G
	*	-	-	-	*	-	-	-	*	-	-	-	-	-	-	*
5 [8]	X	.	X	X	X	.	.	X	X	.	X	.	.	.	X	X
5+8 [5]	.	.	X	X	.	.	.	X	.	.	X	.	.	.	X	.
4 [7]	.	X	.	X	.	X	.	X	X	.	.	X	.	.	X	.
3m [5]	.	.	X	.	X	.	.	X	X	.	.	.	.	.	X	.
3+ [5]	X	.	X	X	X	.	.	.	.	.	X	.	.	.	.	X
maj7 [2]	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.	X
dom7 [4]	X	.	X	X	.	.	.	.	.	.	X	.	.	.	.	X
min7 [2]	.	.	X	.	.	.	.	.	X	.	.	.	.	.	.	.
b7 [5]	.	.	X	.	X	X	X	.	.	.	.	.	X	.	.	.
maj7-5 [4]	X	X	.	.	X	.	.	.	.	.	.	.	X	.	.	X
dom7-5 [9]	X	.	X	X	.	.	X	.	.	X	X	X	X	X	.	X
min7-5 [5]	.	.	X	.	.	X	X	.	X	.	.	.	X	.	.	.
8+5 [5]	.	.	X	.	.	.	.	X	.	.	X	X	.	.	X	.
8+4 [6]	.	.	.	X	.	.	.	X	.	X	.	X	X	.	X	.
8+3m [3]	.	.	.	.	.	.	.	X	.	.	X	.	.	.	X	.
8+3+ [3]	.	.	X	.	.	.	.	.	.	.	X	X	.	.	.	.
8+maj7 [0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7 [3]	.	.	X	.	.	.	.	.	.	.	X	X	.	.	.	.
8+min7 [1]	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
8+b7 [4]	.	.	.	.	.	X	.	.	.	.	X	.	X	X	.	.
8+maj7-5 [2]	.	.	.	.	.	X	.	.	.	X	.	.	.	.	.	.
8+dom7-5 [8]	.	X	X	X	.	X	X	.	.	.	X	X	.	X	.	.
8+min7-5 [4]	.	.	.	.	.	X	.	.	.	.	X	.	X	X	.	.

VI - 2

hFhFhFFFFhFFFh

Intervals:

```

8      .+++ .+++++ .+++
3-     +++++ .+.+.+.
8+3-   ++.++.+.+++...
5       +.++.+.+.++.++
8+5     +.++.++.+.+.+.
7       .++.+++++ .+.++
8+7     .++.+.++++.++++
3       +.+.+.++++.++++
8+3     +++.+.++++.++++
maj7    +.++.+.+.+.+.
8+maj7  ++.+.+.+.+.+.
6-     .++.+.+++++ .+
8+6-   .+++ .+.+++ .++++
6       +.+++ .+.+++ .+.
8+6     +.+++++ .+.+.+.
4       .+.+++ .+.+++ .+
8+4     +.+++ .+.+++ .+.
b5      +++.+.+++++ .+.
8+b5    .++.+++ .+.++++

```

Root-Notes:

Chord	[#roots]	G	G#	A#	B	C#	D	E	F#	G#	A#	B	C	D	E	F#	G
*	-	-	-	*	-	-	-	-	-	-	-	-	*	-	-	-	*
5	[8]	X	.	.	X	X	.	X	.	.	.	X	X	.	X	X	X
5+8	[5]	.	.	.	X	.	.	X	.	.	.	X	.	.	X	X	.
4	[7]	.	X	.	X	X	.	.	X	.	.	X	.	X	.	X	.
3m	[5]	X	.	.	X	X	.	.	.	.	.	X	.	.	X	.	X
3+	[5]	X	.	.	.	.	.	X	.	.	.	.	X	.	X	X	X
maj7	[2]	X	.	.	.	.	.	.	.	.	.	.	X	.	.	.	X
dom7	[4]	.	.	.	.	.	.	X	.	.	.	.	X	.	X	X	.
min7	[2]	.	.	.	.	X	.	.	.	.	.	.	.	.	X	.	.
b7	[5]	X	X	X	.	.	.	.	.	X	.	.	.	.	X	.	X
maj7-5	[4]	X	.	.	.	.	.	.	.	X	.	.	X	X	.	.	X
dom7-5	[9]	.	.	X	.	.	X	X	X	X	X	.	X	.	X	X	.
min7-5	[5]	.	X	X	.	X	.	.	.	X	.	.	.	.	X	.	.
8+5	[5]	.	.	.	X	.	.	X	X	.	.	X	.	.	X	.	.
8+4	[6]	.	.	.	X	.	X	.	X	X	.	X	.	.	.	X	.
8+3m	[3]	.	.	.	X	.	.	X	.	.	.	X	.	.	.	.	.
8+3+	[3]	.	.	.	.	.	.	X	X	.	.	.	.	.	X	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	.	.	.	X	X	.	.	.	.	.	X	.	.
8+min7	[1]	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8+b7	[4]	.	X	.	.	.	.	X	.	X	X	.	.	.	.	.	.
8+maj7-5	[2]	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.	.
8+dom7-5	[8]	.	X	X	.	.	.	X	X	.	X	.	.	X	X	X	.
8+min7-5	[4]	.	X	.	.	.	.	X	.	X	X	.	.	.	.	.	.

VII - 0

hFFhhFFFhhFFFFh

=====

Intervals:

8	.+++ .++++ .+++++
3-	+ .+ .+ .+ .+ .+ .+
8+3-	+ . . . + .+ . . . +
5	+ . . . + .+ . . . +
8+5	+ . . . + .+ . . . +
7	.+++ .++++ .+++++
8+7	.+++ .++++ .+++++
3	.+++ .++++ .+++++
8+3	.+++ .++++ .+++++
maj7	+ .+ .+ . . . + .+ . .
8+maj7	+ .+ .+ . . . + .+ . .
6-	.++++ .++++ .+++++
8+6-	.+++ .++++ .+++++
6	+ . . . + . . . + .+ .
8+6	+ .+ .+ .+ . . . + . .
4	+ . . . + .+ . . . + . .
8+4	+ . . . + .+ . . . + .
b5	++++ .++++ .+++++
8+b5	.++++ .++++ .+++++

Root-Notes:

		G	G#	A#	C	C#	D	E	F#	G#	A	A#	C	D	E	F#	G
Chord	[#roots]	*	-	-	-	*	-	-	-	-	*	-	-	-	-	-	*
5	[6]	X	.	.	.	X	X	.	.	.	X	.	X	.	.	X	X
5+8	[3]	.	.	.	.	.	X	.	.	.	.	.	X	.	.	X	.
4	[6]	X	X	.	.	X	.	X	.	.	X	.	.	X	.	.	X
3m	[3]	X	.	.	.	X	.	.	.	.	X	.	.	.	.	.	X
3+	[3]	.	.	.	.	.	X	.	.	.	.	.	X	.	.	X	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	.	.	.	.	X	.	.	.	.	.	X	.	.	X	.
min7	[1]	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
b7	[4]	X	.	X	.	.	.	.	X	.	.	.	.	.	X	.	X
maj7-5	[3]	.	.	X	.	.	.	.	.	X	.	.	.	X	.	.	.
dom7-5	[12]	.	X	X	X	.	X	X	X	X	.	X	X	X	X	X	.
min7-5	[4]	.	.	X	.	.	.	.	X	.	X	.	.	.	X	.	.
8+5	[3]	.	.	.	X	.	.	.	X	.	.	.	.	X	.	.	.
8+4	[3]	.	.	.	.	.	X	.	.	X	.	.	.	.	X	.	.
8+3m	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+3+	[3]	.	.	.	X	.	.	.	X	.	.	.	.	X	.	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	X	.	.	.	X	.	.	.	.	X	.	.	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	.	.	.	.	.	X	.	.	.	X	.	.	.	X	.
8+maj7-5	[3]	.	X	.	.	.	X	.	.	.	.	X	.	.	.	.	.
8+dom7-5	[12]	.	X	X	X	.	X	X	X	X	.	X	X	X	X	X	.
8+min7-5	[3]	.	.	.	.	.	.	X	.	.	.	X	.	.	.	X	.

VII - 1

hFFFhhFFFFhhFFh

Intervals:

```

8      .++++.+++++.+++
3-     +..+.+++++.+.+.
8+3-   +.+.+.+++++.+++
5      ++..+.+.+++++.+++
8+5     +..+.+.+++++.+++
7      .++++++++++.+++
8+7     .++++.+++++.+++
3      .++++.+++++.+++
8+3     .++++++++++.+++
maj7    +...+...+...+.+.
8+maj7  ++...++...+...+.
6-     +++++.+++++.+++
8+6-    .++++.+++++.+++
6      +...+.+.+.+.+.
8+6     +.+.+.+.+.+.+.
4      +.+.+.+.+.+.+.
8+4     ++..+...+...+.
b5      .++++.+++++
8+b5    +++++.+++++.+++

```

Root-Notes:

		G	G#	A#	C	D	D#	E	F#	G#	A#	C	C#	D	E	F#	G
Chord	[#roots]	*	-	-	-	-	*	-	-	-	-	-	*	-	-	-	*
5	[6]	X	X	.	.	.	X	.	X	.	.	X	X	.	.	.	X
5+8	[3]	.	X	.	.	.	.	.	X	.	.	X	.	.	.	.	.
4	[6]	X	.	X	.	.	X	.	.	X	.	.	X	X	.	.	X
3m	[3]	X	.	.	.	.	X	.	.	.	.	.	X	.	.	.	X
3+	[3]	.	X	.	.	.	.	.	X	.	.	X	.	.	.	.	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	X	.	.	.	.	.	X	.	.	X	.	.	.	.	.
min7	[1]	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
b7	[4]	.	.	.	X	.	.	.	.	.	X	.	X	.	X	.	.
maj7-5	[3]	.	.	.	.	X	.	.	.	X	.	.	.	.	X	.	.
dom7-5	[12]	.	X	X	X	X	.	X	X	X	X	X	.	X	X	X	.
min7-5	[4]	.	.	.	X	.	X	.	.	.	X	.	.	.	X	.	.
8+5	[3]	.	.	.	X	.	.	.	.	X	.	.	.	.	.	X	.
8+4	[3]	.	X	.	.	X	.	.	.	.	X	.	.	.	.	.	.
8+3m	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+3+	[3]	.	.	.	X	.	.	.	.	X	.	.	.	.	.	X	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	X	.	.	.	.	X	.	.	.	.	.	X	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	.	X	.	.	.	X	.	.	.	X	.	.	.	.	.
8+maj7-5	[3]	.	X	.	.	.	.	X	.	.	.	.	.	X	.	.	.
8+dom7-5	[12]	.	X	X	X	X	.	X	X	X	X	X	.	X	X	X	.
8+min7-5	[3]	.	.	X	.	.	.	X	.	.	.	X	.	.	.	.	.

VII - 2

hFFFFhFFhFFhFFFh

Intervals:

```

8      .+++++.+++.+
3-     +...+.+.+.+.
8+3-   ++...++...+.
5      +.+.+.+.+.
8+5    +..+.+.+.+.
7      ++++++.+++.+
8+7    .+++++.+++.+
3      .+++++.+++.+
8+3    ++++++.+++.+
maj7   +..+.+.+.+.
8+maj7 ++...++...+.
6-     .+++++.+++++
8+6-   .+++++.+++.+
6      ++..+.+.+.
8+6    +.+.+.+.+.
4      +..+.+.+.+.
8+4    +...+.+.+.+.
b5     .+++++.+++++
8+b5   .+++++.+++++

```

Root-Notes:

		G	G#	A#	C	D	E	F	F#	G#	A#	B	C	D	E	F#	G
Chord	[#roots]	*	-	-	-	-	-	*	-	-	-	*	-	-	-	-	*
5	[6]	X	.	X	.	.	X	X	.	.	.	X	X	.	.	.	X
5+8	[3]	.	.	X	.	.	X	.	.	.	.	.	X	.	.	.	.
4	[6]	X	.	.	X	.	.	X	X	.	.	X	.	X	.	.	X
3m	[3]	X	.	.	.	.	.	X	.	.	.	X	.	.	.	.	X
3+	[3]	.	.	X	.	.	X	.	.	.	.	.	X	.	.	.	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	.	X	.	.	X	.	.	.	.	.	X	.	.	.	.
min7	[1]	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X
b7	[4]	.	.	.	.	X	.	X	.	X	.	.	.	.	X	.	.
maj7-5	[3]	.	.	.	X	.	.	.	.	X	.	.	.	.	.	X	.
dom7-5	[12]	.	X	X	X	X	X	.	X	X	X	.	X	X	X	X	.
min7-5	[4]	X	.	.	.	X	.	.	.	X	.	.	.	.	X	.	X
8+5	[3]	.	.	.	X	.	.	.	.	.	X	.	.	.	X	.	.
8+4	[3]	.	.	.	.	X	.	.	.	.	.	.	X	.	.	X	.
8+3m	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+3+	[3]	.	.	.	X	.	.	.	.	.	X	.	.	.	X	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	X	.	.	.	.	.	X	.	.	.	X	.	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	X	.	.	.	X	.	.	.	.	.	X	.	.	.	.
8+maj7-5	[3]	.	X	.	.	.	.	.	X	.	.	.	X	.	.	.	.
8+dom7-5	[12]	.	X	X	X	X	X	.	X	X	X	.	X	X	X	X	.
8+min7-5	[3]	.	X	.	.	.	X	.	.	.	.	.	X	.	.	.	.

8	+++++.++++.+++++
3-	+...+.+.+.+.+.+
8+3-	+...+.+.+.+.+
5	++...+.+.+.+.+
8+5	+...+.+.+.+.+
7	.++++.+++++ +++++
8+7	.++++.++++.+++++
3	.++++.++++.+++++
8+3	.+++++ +++++.+++++
maj7	+...+.+.+.+.+
8+maj7	++...+.+.+.+.+
6-	+++++.++++.+++++
8+6-	.++++.++++.+++++
6	+...+.+.+.+.+
8+6	+...+.+.+.+.+
4	+...+.+.+.+.+
8+4	+...+.+.+.+.+
b5	.+++++ +++++.+++++
8+b5	.++++.+++++ +++++

Root-Notes:		G	G#	A#	C	D	D#	E	F#	G#	A	A#	C	D	E	F#	G
Chord	[#roots]	*	-	-	-	*	-	-	-	*	-	-	-	-	-	-	*
5	[6]	X	X	.	.	X	X	.	.	.	X	.	X	.	.	.	X
5+8	[3]	.	X	.	.	X	.	.	.	.	.	.	X	.	.	.	.
4	[6]	X	.	X	.	.	X	X	.	.	X	.	.	X	.	.	X
3m	[3]	X	.	.	.	.	X	.	.	.	X	.	.	.	.	.	X
3+	[3]	.	X	.	.	X	.	.	.	.	.	.	X	.	.	.	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	X	.	.	X	.	.	.	.	.	.	X	.	.	.	.
min7	[1]	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.	.
b7	[4]	.	.	.	X	.	X	.	X	.	.	.	.	.	X	.	.
maj7-5	[3]	.	.	X	.	.	.	.	.	X	.	.	.	.	X	.	.
dom7-5	[12]	.	X	X	X	X	.	X	X	X	.	X	X	X	X	X	.
min7-5	[4]	.	.	.	X	.	.	.	X	.	X	.	.	.	X	.	.
8+5	[3]	.	.	.	X	.	.	.	.	X	.	.	.	X	.	.	.
8+4	[3]	.	.	.	.	X	.	.	.	.	.	X	.	.	X	.	.
8+3m	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+3+	[3]	.	.	.	X	.	.	.	.	X	.	.	.	X	.	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	X	.	.	.	.	X	.	.	.	X	.	.	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	.	.	.	.	.	X	.	.	.	.	X	.	.	X	.
8+maj7-5	[3]	.	X	.	.	.	.	X	.	.	.	X	.	.	.	.	.
8+dom7-5	[12]	.	X	X	X	X	.	X	X	X	.	X	X	X	X	X	.
8+min7-5	[3]	.	.	.	.	.	.	X	.	.	.	.	X	.	.	X	.

VIII - 1

hFFhhFFFFhhFFFh

=====

Intervals:

8	.+++ .++++ .++++
3-	+.+.+.+.+.+.+.+
8+3-	++..+.+.+.+.+.+
5	+.+.+.+.+.+.+.+
8+5	+.+.+.+.+.+.+.+
7	.+++++ .++++
8+7	.+++ .++++ .++++
3	.+++ .++++ .++++
8+3	++++ .++++ .++++
maj7	+.+.+.+.+.+.+.+
8+maj7	++..+.+.+.+.+.+
6-	.+++ .+++++ .++++
8+6-	.+++ .++++ .++++
6	+.+.+.+.+.+.+.+
8+6	+.+.+.+.+.+.+.+
4	++..+.+.+.+.+.+
8+4	+.+.+.+.+.+.+.+
b5	++++ .++++ .++++
8+b5	.+++++ .++++

Root-Notes:

		G	G#	A#	C	C#	D	E	F#	G#	A#	B	C	D	E	F#	G
Chord	[#roots]	*	-	-	-	*	-	-	-	-	-	*	-	-	-	-	*
5	[6]	X	.	.	.	X	.	X	.	.	.	X	X	.	.	X	X
5+8	[3]	.	.	.	.	.	.	X	.	.	.	.	X	.	.	X	.
4	[6]	X	X	.	.	X	.	.	X	.	.	X	.	X	.	.	X
3m	[3]	X	.	.	.	X	.	.	.	.	.	X	.	.	.	.	X
3+	[3]	.	.	.	.	.	.	X	.	.	.	.	X	.	.	X	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	.	.	.	.	.	X	.	.	.	.	X	.	.	X	.
min7	[1]	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
b7	[4]	X	.	X	.	.	.	.	.	X	.	.	.	.	X	.	X
maj7-5	[3]	.	.	.	X	.	.	.	.	X	.	.	.	X	.	.	.
dom7-5	[12]	.	X	X	X	.	X	X	X	X	X	.	X	X	X	X	.
min7-5	[4]	.	.	X	.	X	.	.	.	X	.	.	.	.	X	.	.
8+5	[3]	.	.	.	X	.	.	.	X	.	.	.	.	.	X	.	.
8+4	[3]	.	.	.	.	.	X	.	.	X	.	.	.	.	.	X	.
8+3m	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+3+	[3]	.	.	.	X	.	.	.	X	.	.	.	.	.	X	.	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	X	.	.	.	X	.	.	.	.	.	X	.	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	X	.	.	.	.	X	.	.	X	.	.	.	.	.	.
8+maj7-5	[3]	.	X	.	.	.	X	.	.	.	.	.	X	.	.	.	.
8+dom7-5	[12]	.	X	X	X	.	X	X	X	X	X	.	X	X	X	X	.
8+min7-5	[3]	.	X	.	.	.	.	X	.	.	X	.	.	.	.	.	.

VIII - 2

hFFFFhhFFFhhFFh

Intervals:

```

8      .+++++.++++.+++
3-     +...+.+...+.+.
8+3-   +.+.++...++..
5      +.+.++...++...
8+5    +..+.+.+.+.+.
7      ++++++.++++.+++
8+7    .+++++.++++.+++
3      .+++++.++++.+++
8+3    .+++++.+++++++
maj7   +...+.+...+.+.
8+maj7 ++....++....++..
6-     .+++++++...+++
8+6-   .+++++.++++.+++
6      ++...++...+.+.
8+6    +.+.+.+.+.+.+.
4      +..+.+.+.+.+.
8+4    ++..+.+.+.+.
b5     .+++++.+++++++
8+b5   ++++++.++++.+++

```

Root-Notes:

Chord	[#roots]	G	G#	A#	C	D	E	F	F#	G#	A#	C	C#	D	E	F#	G
		*	-	-	-	-	-	*	-	-	-	-	*	-	-	-	*
5	[6]	X	.	X	.	.	.	X	X	.	.	X	X	.	.	.	X
5+8	[3]	.	.	X	.	.	.	.	X	.	.	X	.	.	.	.	.
4	[6]	X	.	.	X	.	.	X	.	X	.	.	X	X	.	.	X
3m	[3]	X	.	.	.	.	.	X	.	.	.	.	X	.	.	.	X
3+	[3]	.	.	X	.	.	.	.	X	.	.	X	.	.	.	.	.
maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
dom7	[3]	.	.	X	.	.	.	.	X	.	.	X	.	.	.	.	.
min7	[1]	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.	X
b7	[4]	.	.	.	.	X	.	.	.	.	X	.	X	.	X	.	.
maj7-5	[3]	.	.	.	.	X	.	.	.	X	.	.	.	.	.	X	.
dom7-5	[12]	.	X	X	X	X	X	.	X	X	X	X	.	X	X	X	.
min7-5	[4]	X	.	.	.	X	.	.	.	.	X	.	.	.	X	.	X
8+5	[3]	.	.	.	X	.	.	.	.	.	X	.	.	.	.	X	.
8+4	[3]	.	X	.	.	X	.	.	.	.	.	X	.	.	.	.	.
8+3m	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+3+	[3]	.	.	.	X	.	.	.	.	.	X	.	.	.	.	X	.
8+maj7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	X	.	.	.	.	.	X	.	.	.	.	X	.
8+min7	[0]	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	.	X	.	.	X	.	.	.	.	.	.	X	.	.	.
8+maj7-5	[3]	.	X	.	.	.	.	.	X	.	.	.	.	X	.	.	.
8+dom7-5	[12]	.	X	X	X	X	X	.	X	X	X	X	.	X	X	X	.
8+min7-5	[3]	.	.	X	.	.	X	.	.	.	.	.	.	X	.	.	.

IX - 0

hFhhFFFFhhFFFFh

Intervals:

```

8      .++.+++++.+++++
3-     ++.+.+.+.+.+.
8+3-   +..+.+.+.+.+.
5      +..+.+.+.+.+.
8+5    +..++.+.+.+.+.
7      .+++++
8+7    .++.+++++.+++++
3      +++.+++++.+++++
8+3    .++.+++++.+++++
maj7   +.++.+.+.+.+.
8+maj7 ++.++.+.+.+.+.
6-     .++.+++++.+++++
8+6-   .+++++
6      +..++.+.+.+.+.
8+6    +.++.+.+.+.+.
4      +..+.+.+.+.+.
8+4    +..+.+.+.+.+.
b5     .++.+++++.+++++
8+b5   .++.+++++.+++++

```

Root-Notes:

		G	G#	A#	B	C	D	E	F#	G#	A	A#	C	D	E	F#	G
Chord	[#roots]	*	-	-	*	-	-	-	-	-	*	-	-	-	-	-	*
5	[6]	X	.	.	X	.	X	.	.	.	X	.	X	.	X	.	X
5+8	[3]	.	.	.	.	.	X	.	.	.	.	.	X	.	X	.	.
4	[6]	X	.	.	X	.	.	X	.	.	X	.	.	X	.	X	X
3m	[4]	X	.	.	X	.	.	.	.	.	X	.	.	.	X	.	X
3+	[4]	X	.	.	.	.	X	.	.	.	.	.	X	.	X	.	X
maj7	[2]	X	.	.	.	.	.	.	.	.	.	.	X	.	.	.	X
dom7	[3]	.	.	.	.	.	X	.	.	.	.	.	X	.	X	.	.
min7	[3]	.	.	.	X	.	.	.	.	.	X	.	.	.	X	.	.
b7	[3]	.	X	.	.	.	.	.	X	.	.	.	.	.	X	.	.
maj7-5	[4]	X	.	X	.	.	.	.	.	X	.	.	X	.	.	.	X
dom7-5	[12]	.	X	X	.	X	X	X	X	X	.	X	X	X	X	X	.
min7-5	[5]	.	X	.	X	.	.	.	X	.	X	.	.	.	X	.	.
8+5	[3]	.	.	.	.	X	.	X	.	.	.	.	.	X	.	.	.
8+4	[3]	.	.	.	.	.	X	.	X	.	.	.	.	.	X	.	.
8+3m	[1]	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8+3+	[3]	.	.	.	.	X	.	X	.	.	.	.	.	X	.	.	.
8+maj7	[1]	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	.	.	.	X	.	X	.	.	.	.	.	X	.	.	.
8+min7	[1]	.	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	.	.	.	.	.	X	.	X	.	.	.	.	.	X	.
8+maj7-5	[3]	.	X	.	.	X	.	.	.	.	.	X	.	.	.	.	.
8+dom7-5	[12]	.	X	X	.	X	X	X	X	X	.	X	X	X	X	X	.
8+min7-5	[3]	.	.	.	.	.	.	X	.	X	.	.	.	.	.	X	.

IX - 1

hFFFFhFhFFFFhFh

Intervals:

```

8      .+++++.+++++.++
3-     +...+.+...+.++.
8+3-   +..+.++.....++..
5      +.+.+.+.+.+.+.
8+5     ++.+.+.+.+.+.+.
7      ++++++.....++
8+7     .+++++.+++++.++
3      .+++++.+++++...
8+3     .+++++.+++++.++
maj7    +.....++.+.+.+.
8+maj7  ++.....++.+.+.
6-     .+++++.+++++.++
8+6-   ++++++.+++++.++
6      ++.....++.+.+.+.
8+6     +.+.+.+.+.+.+.
4      +..+.+.+.+.+.+.
8+4     +.+.+.+.+.+.+.
b5      .+++++.+++++.++
8+b5    .+++++.+++++.++

```

Root-Notes:

		G	G#	A#	C	D	E	F	F#	G#	A#	C	D	D#	E	F#	G
Chord	[#roots]	*	-	-	-	-	-	*	-	-	-	-	-	*	-	-	*
5	[6]	X	.	X	.	.	.	X	.	X	.	X	.	X	.	.	X
5+8	[3]	.	.	X	.	.	.	.	.	X	.	X	.	.	.	.	.
4	[6]	X	.	.	X	.	.	X	.	.	X	.	X	X	.	.	X
3m	[4]	X	.	.	.	.	.	X	.	.	.	X	.	X	.	.	X
3+	[4]	.	.	X	.	.	.	.	.	X	.	X	.	X	.	.	.
maj7	[2]	.	.	.	.	.	.	.	.	X	.	.	.	X	.	.	.
dom7	[3]	.	.	X	.	.	.	.	.	X	.	X	.	.	.	.	.
min7	[3]	X	.	.	.	.	.	X	.	.	.	X	.	.	.	.	X
b7	[3]	.	.	.	.	X	.	.	.	.	.	X	.	.	X	.	.
maj7-5	[4]	.	.	.	.	.	X	.	.	X	.	.	.	X	.	X	.
dom7-5	[12]	.	X	X	X	X	X	.	X	X	X	X	X	.	X	X	.
min7-5	[5]	X	.	.	.	X	.	X	.	.	.	X	.	.	X	.	X
8+5	[3]	.	X	.	X	.	.	.	.	.	X	.	.	.	.	.	.
8+4	[3]	.	.	X	.	X	.	.	.	.	.	X	.	.	.	.	.
8+3m	[1]	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
8+3+	[3]	.	X	.	X	.	.	.	.	.	X	.	.	.	.	.	.
8+maj7	[1]	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
8+dom7	[3]	.	X	.	X	.	.	.	.	.	X	.	.	.	.	.	.
8+min7	[1]	.	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
8+b7	[3]	.	.	.	X	.	X	.	.	.	.	.	X	.	.	.	.
8+maj7-5	[3]	.	X	.	.	.	.	.	X	.	.	.	.	.	X	.	.
8+dom7-5	[12]	.	X	X	X	X	X	.	X	X	X	X	X	.	X	X	.
8+min7-5	[3]	.	.	.	X	.	X	.	.	.	.	.	X	.	.	.	.

IX - 2

hFFFFhFhhFFFFh

Intervals:

```

8      .+++++.++.+++++
3-     +...+.++.+...+.
8+3-   +...+.++.+...+.
5      +.+.+.+.+.+.+.
8+5     +..+.+.+.+.+.
7      ++++++.+++++++
8+7     .+++++.++.+++++
3      .++++++++.+++++
8+3     .+++++.++.+++++
maj7    +.+...+.+.+.+.
8+maj7  ++.....+.+.+.
6-     .+++++.++.+++++
8+6-    .+++++.+++++++
6      ++.+.+.+.+.+.
8+6     +.+...+.+.+.+.
4      +..+.+.+.+.+.
8+4     +...+.+.+.+.+.
b5      .+++++.++.+++++
8+b5    .+++++.++.+++++

```

Root-Notes:

		G	G#	A#	C	D	E	F	F#	G#	A	A#	C	D	E	F#	G
Chord	[#roots]	*	-	-	-	-	-	*	-	-	*	-	-	-	-	-	*
5	[6]	X	.	X	.	X	.	X	.	.	X	.	X	.	.	.	X
5+8	[3]	.	.	X	.	X	.	.	.	.	.	.	X	.	.	.	.
4	[6]	X	.	.	X	.	X	X	.	.	X	.	.	X	.	.	X
3m	[4]	X	.	.	.	X	.	X	.	.	X	.	.	.	.	.	X
3+	[4]	.	.	X	.	X	.	X	.	.	.	.	X	.	.	.	.
maj7	[2]	.	.	X	.	.	.	X	.	.	.	.	.	.	.	.	.
dom7	[3]	.	.	X	.	X	.	.	.	.	.	.	X	.	.	.	.
min7	[3]	X	.	.	.	X	.	.	.	.	X	.	.	.	.	.	X
b7	[3]	.	.	.	.	X	.	.	X	.	.	.	.	.	X	.	.
maj7-5	[4]	.	.	X	.	.	.	X	.	X	.	.	.	.	.	X	.
dom7-5	[12]	.	X	X	X	X	X	.	X	X	.	X	X	X	X	X	.
min7-5	[5]	X	.	.	.	X	.	.	X	.	X	.	.	.	X	.	X
8+5	[3]	.	.	.	X	.	.	.	.	.	.	X	.	X	.	.	.
8+4	[3]	.	.	.	.	X	.	.	.	.	.	.	X	.	X	.	.
8+3m	[1]	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
8+3+	[3]	.	.	.	X	.	.	.	.	.	.	X	.	X	.	.	.
8+maj7	[1]	.	.	.	.	.	.	.	.	.	.	X	.	.	.	.	.
8+dom7	[3]	.	.	.	X	.	.	.	.	.	.	X	.	X	.	.	.
8+min7	[1]	.	.	.	.	.	.	.	.	.	.	.	.	X	.	.	.
8+b7	[3]	.	.	.	.	.	X	.	.	.	.	.	.	X	.	X	.
8+maj7-5	[3]	.	X	.	.	.	.	.	X	.	.	X	.	.	.	.	.
8+dom7-5	[12]	.	X	X	X	X	X	.	X	X	.	X	X	X	X	X	.
8+min7-5	[3]	.	.	.	.	.	X	.	.	.	.	.	.	X	.	X	.

Chromatic Mode Representants:

- I - 0: C-G#-C#|C#- A- D| D-A#-D#|D#- B- E| E- C- F| F-C#-F#
F#- D- G| G-D#-G#|G#- E- A| A- F-A#|A#-F#- B| B- G- C
- I - 1: C- F- E|C#-F#- F| D- G-F#|D#-G#- G| E- A-G#| F-A#- A
F#- B-A#| G- C- B|G#-C#- C| A- D-C#|A#-D#- D| B- E-D#
- I - 2: C- B- G|C#- C-G#| D-C#- A|D#- D-A#| E-D#- B| F- E- C
F#- F-C#| G-F#- D|G#- G-D#| A-G#- E|A#- A- F| B-A#-F#
- II - 0: C- B- E|C#- C- F| D-C#-F#|D#- D- G| E-D#-G#| F- E- A
F#- F-A#| G-F#- B|G#- G- C| A-G#-C#|A#- A- D| B-A#-D#
- II - 1: C- F-C#|C#-F#- D| D- G-D#|D#-G#- E| E- A- F| F-A#-F#
F#- B- G| G- C-G#|G#-C#- A| A- D-A#|A#-D#- B| B- E- C
- II - 2: C-G#- G|C#- A-G#| D-A#- A|D#- B-A#| E- C- B| F-C#- C
F#- D-C#| G-D#- D|G#- E-D#| A- F- E|A#-F#- F| B- G-F#
- III - 0: C-D#- D|C#- E-D#| D- F- E|D#-F#- F| E- G-F#| F-G#- G
F#- A-G#| G-A#- A|G#- B-A#| A- C- B|A#-C#- C| B- D-C#
- III - 1: C- B- A|C#- C-A#| D-C#- B|D#- D- C| E-D#-C#| F- E- D
F#- F-D#| G-F#- E|G#- G- F| A-G#-F#|A#- A- G| B-A#-G#
- III - 2: C-A#-C#|C#- B- D| D- C-D#|D#-C#- E| E- D- F| F-D#-F#
F#- E- G| G- F-G#|G#-F#- A| A- G-A#|A#-G#- B| B- A- C
- IV - 0: C-F#-C#|C#- G- D| D-G#-D#|D#- A- E| E-A#- F| F- B-F#
F#- C- G| G-C#-G#|G#- D- A| A-D#-A#|A#- E- B| B- F- C
- IV - 1: C- G-F#|C#-G#- G| D- A-G#|D#-A#- A| E- B-A#| F- C- B
F#-C#- C| G- D-C#|G#-D#- D| A- E-D#|A#- F- E| B-F#- F
- IV - 2: C- B- F|C#- C-F#| D-C#- G|D#- D-G#| E-D#- A| F- E-A#
F#- F- B| G-F#- C|G#- G-C#| A-G#- D|A#- A-D#| B-A#- E
- V - 0: C-A#- A|C#- B-A#| D- C- B|D#-C#- C| E- D-C#| F-D#- D
F#- E-D#| G- F- E|G#-F#- F| A- G-F#|A#-G#- G| B- A-G#
- V - 1: C- B- D|C#- C-D#| D-C#- E|D#- D- F| E-D#-F#| F- E- G
F#- F-G#| G-F#- A|G#- G-A#| A-G#- B|A#- A- C| B-A#-C#
- V - 2: C-D#-C#|C#- E- D| D- F-D#|D#-F#- E| E- G- F| F-G#-F#
F#- A- G| G-A#-G#|G#- B- A| A- C-A#|A#-C#- B| B- D- C

Chromatic Mode Representants:

- VI - 0: C- B-F# | C#- C- G | D-C#-G# | D#- D- A | E-D#-A# | F- E- B
F#- F- C | G-F#-C# | G#- G- D | A-G#-D# | A#- A- E | B-A#- F
- VI - 1: C- G-C# | C#-G#- D | D- A-D# | D#-A#- E | E- B- F | F- C-F#
F#-C#- G | G- D-G# | G#-D#- A | A- E-A# | A#- F- B | B-F#- C
- VI - 2: C-F#- F | C#- G-F# | D-G#- G | D#- A-G# | E-A#- A | F- B-A#
F#- C- B | G-C#- C | G#- D-C# | A-D#- D | A#- E-D# | B- F- E
- VII - 0: C-F#- D | C#- G-D# | D-G#- E | D#- A- F | E-A#-F# | F- B- G
F#- C-G# | G-C#- A | G#- D-A# | A-D#- B | A#- E- C | B- F-C#
- VII - 1: C-G#-F# | C#- A- G | D-A#-G# | D#- B- A | E- C-A# | F-C#- B
F#- D- C | G-D#-C# | G#- E- D | A- F-D# | A#-F#- E | B- G- F
- VII - 2: C-A#- E | C#- B- F | D- C-F# | D#-C#- G | E- D-G# | F-D#- A
F#- E-A# | G- F- B | G#-F#- C | A- G-C# | A#-G#- D | B- A-D#
- VIII - 0: C-G#- D | C#- A-D# | D-A#- E | D#- B- F | E- C-F# | F-C#- G
F#- D-G# | G-D#- A | G#- E-A# | A- F- B | A#-F#- C | B- G-C#
- VIII - 1: C-F#- E | C#- G- F | D-G#-F# | D#- A- G | E-A#-G# | F- B- A
F#- C-A# | G-C#- B | G#- D- C | A-D#-C# | A#- E- D | B- F-D#
- VIII - 2: C-A#-F# | C#- B- G | D- C-G# | D#-C#- A | E- D-A# | F-D#- B
F#- E- C | G- F-C# | G#-F#- D | A- G-D# | A#-G#- E | B- A- F
- IX - 0: C- E- D | C#- F-D# | D-F#- E | D#- G- F | E-G#-F# | F- A- G
F#-A#-G# | G- B- A | G#- C-A# | A-C#- B | A#- D- C | B-D#-C#
- IX - 1: C-A#-G# | C#- B- A | D- C-A# | D#-C#- B | E- D- C | F-D#-C#
F#- E- D | G- F-D# | G#-F#- E | A- G- F | A#-G#-F# | B- A- G
- IX - 2: C-A#- D | C#- B-D# | D- C- E | D#-C#- F | E- D-F# | F-D#- G
F#- E-G# | G- F- A | G#-F#-A# | A- G- B | A#-G#- C | B- A-C#

Hexadecimal Scale Name to Type and Mode Conversion Chart:

1	A- C- B represents III - 0
2	A- C-A# represents V - 2
3	A- D-A# represents II - 1
4	A- D-C# represents I - 1
5	A- E-A# represents VI - 1
6	A- E-D# represents IV - 1
7	A- F- B represents VIII - 0
8	A- F- E represents II - 2
9	A- F-A# represents I - 0
10	A- F-D# represents VII - 1
11	A- G- B represents IX - 2
12	A- G- F represents IX - 1
13	A- G-A# represents III - 2
14	A- G-C# represents VII - 2
15	A- G-D# represents VIII - 2
16	A- G-F# represents V - 0
17	A-C#- B represents IX - 0
18	A-D#- B represents VII - 0
19	A-D#- D represents VI - 2
20	A-D#-A# represents IV - 0
21	A-D#-C# represents VIII - 1
22	A-G#- B represents V - 1
23	A-G#- D represents IV - 2
24	A-G#- E represents I - 2
25	A-G#-C# represents II - 0
26	A-G#-D# represents VI - 0
27	A-G#-F# represents III - 1
28	B- A- C represents III - 2
29	B- A- F represents VIII - 2
30	B- A- G represents IX - 1
31	B- A-C# represents IX - 2
32	B- A-D# represents VII - 2
33	B- A-G# represents V - 0
34	B- D- C represents V - 2
35	B- D-C# represents III - 0
36	B- E- C represents II - 1
37	B- E-D# represents I - 1
38	B- F- C represents IV - 0
39	B- F- E represents VI - 2
40	B- F-C# represents VII - 0
41	B- F-D# represents VIII - 1
42	B- G- C represents I - 0
43	B- G- F represents VII - 1
44	B- G-C# represents VIII - 0
45	B- G-F# represents II - 2
46	B-A#- E represents IV - 2
47	B-A#- F represents VI - 0
48	B-A#-C# represents V - 1

Hexadecimal Scale Name to Type and Mode Conversion Chart:

49	B-A#-D#	represents	II - 0
50	B-A#-F#	represents	I - 2
51	B-A#-G#	represents	III - 1
52	B-D#-C#	represents	IX - 0
53	B-F#- C	represents	VI - 1
54	B-F#- F	represents	IV - 1
55	C- B- A	represents	III - 1
56	C- B- D	represents	V - 1
57	C- B- E	represents	II - 0
58	C- B- F	represents	IV - 2
59	C- B- G	represents	I - 2
60	C- B-F#	represents	VI - 0
61	C- E- D	represents	IX - 0
62	C- F- E	represents	I - 1
63	C- F-C#	represents	II - 1
64	C- G-C#	represents	VI - 1
65	C- G-F#	represents	IV - 1
66	C-A#- A	represents	V - 0
67	C-A#- D	represents	IX - 2
68	C-A#- E	represents	VII - 2
69	C-A#-C#	represents	III - 2
70	C-A#-F#	represents	VIII - 2
71	C-A#-G#	represents	IX - 1
72	C-D#- D	represents	III - 0
73	C-D#-C#	represents	V - 2
74	C-F#- D	represents	VII - 0
75	C-F#- E	represents	VIII - 1
76	C-F#- F	represents	VI - 2
77	C-F#-C#	represents	IV - 0
78	C-G#- D	represents	VIII - 0
79	C-G#- G	represents	II - 2
80	C-G#-C#	represents	I - 0
81	C-G#-F#	represents	VII - 1
82	D- A-D#	represents	VI - 1
83	D- A-G#	represents	IV - 1
84	D- C- B	represents	V - 0
85	D- C- E	represents	IX - 2
86	D- C-A#	represents	IX - 1
87	D- C-D#	represents	III - 2
88	D- C-F#	represents	VII - 2
89	D- C-G#	represents	VIII - 2
90	D- F- E	represents	III - 0
91	D- F-D#	represents	V - 2
92	D- G-D#	represents	II - 1
93	D- G-F#	represents	I - 1
94	D-A#- A	represents	II - 2
95	D-A#- E	represents	VIII - 0
96	D-A#-D#	represents	I - 0

Hexadecimal Scale Name to Type and Mode Conversion Chart:

97	D-A#-G#	represents VII - 1
98	D-C#- A	represents I - 2
99	D-C#- B	represents III - 1
100	D-C#- E	represents V - 1
101	D-C#- G	represents IV - 2
102	D-C#-F#	represents II - 0
103	D-C#-G#	represents VI - 0
104	D-F#- E	represents IX - 0
105	D-G#- E	represents VII - 0
106	D-G#- G	represents VI - 2
107	D-G#-D#	represents IV - 0
108	D-G#-F#	represents VIII - 1
109	E- A- F	represents II - 1
110	E- A-G#	represents I - 1
111	E- B- F	represents VI - 1
112	E- B-A#	represents IV - 1
113	E- C- B	represents II - 2
114	E- C- F	represents I - 0
115	E- C-A#	represents VII - 1
116	E- C-F#	represents VIII - 0
117	E- D- C	represents IX - 1
118	E- D- F	represents III - 2
119	E- D-A#	represents VIII - 2
120	E- D-C#	represents V - 0
121	E- D-F#	represents IX - 2
122	E- D-G#	represents VII - 2
123	E- G- F	represents V - 2
124	E- G-F#	represents III - 0
125	E-A#- A	represents VI - 2
126	E-A#- F	represents IV - 0
127	E-A#-F#	represents VII - 0
128	E-A#-G#	represents VIII - 1
129	E-D#- A	represents IV - 2
130	E-D#- B	represents I - 2
131	E-D#-A#	represents VI - 0
132	E-D#-C#	represents III - 1
133	E-D#-F#	represents V - 1
134	E-D#-G#	represents II - 0
135	E-G#-F#	represents IX - 0
136	F- A- G	represents IX - 0
137	F- B- A	represents VIII - 1
138	F- B- G	represents VII - 0
139	F- B-A#	represents VI - 2
140	F- B-F#	represents IV - 0
141	F- C- B	represents IV - 1
142	F- C-F#	represents VI - 1
143	F- E- A	represents II - 0
144	F- E- B	represents VI - 0

Hexadecimal Scale Name to Type and Mode Conversion Chart:

145	F- E- C represents I - 2
146	F- E- D represents III - 1
147	F- E- G represents V - 1
148	F- E-A# represents IV - 2
149	F-A#- A represents I - 1
150	F-A#-F# represents II - 1
151	F-C#- B represents VII - 1
152	F-C#- C represents II - 2
153	F-C#- G represents VIII - 0
154	F-C#-F# represents I - 0
155	F-D#- A represents VII - 2
156	F-D#- B represents VIII - 2
157	F-D#- D represents V - 0
158	F-D#- G represents IX - 2
159	F-D#-C# represents IX - 1
160	F-D#-F# represents III - 2
161	F-G#- G represents III - 0
162	F-G#-F# represents V - 2
163	G- B- A represents IX - 0
164	G- C- B represents I - 1
165	G- C-G# represents II - 1
166	G- D-C# represents IV - 1
167	G- D-G# represents VI - 1
168	G- F- A represents IX - 2
169	G- F- B represents VII - 2
170	G- F- E represents V - 0
171	G- F-C# represents VIII - 2
172	G- F-D# represents IX - 1
173	G- F-G# represents III - 2
174	G-A#- A represents III - 0
175	G-A#-G# represents V - 2
176	G-C#- A represents VII - 0
177	G-C#- B represents VIII - 1
178	G-C#- C represents VI - 2
179	G-C#-G# represents IV - 0
180	G-D#- A represents VIII - 0
181	G-D#- D represents II - 2
182	G-D#-C# represents VII - 1
183	G-D#-G# represents I - 0
184	G-F#- A represents V - 1
185	G-F#- B represents II - 0
186	G-F#- C represents IV - 2
187	G-F#- D represents I - 2
188	G-F#- E represents III - 1
189	G-F#-C# represents VI - 0
190	A#- A- C represents V - 1
191	A#- A- D represents II - 0
192	A#- A- E represents VI - 0

Hexadecimal Scale Name to Type and Mode Conversion Chart:

193	A#- A- F represents I - 2
194	A#- A- G represents III - 1
195	A#- A-D# represents IV - 2
196	A#- D- C represents IX - 0
197	A#- E- B represents IV - 0
198	A#- E- C represents VII - 0
199	A#- E- D represents VIII - 1
200	A#- E-D# represents VI - 2
201	A#- F- B represents VI - 1
202	A#- F- E represents IV - 1
203	A#-C#- B represents V - 2
204	A#-C#- C represents III - 0
205	A#-D#- B represents II - 1
206	A#-D#- D represents I - 1
207	A#-F#- B represents I - 0
208	A#-F#- C represents VIII - 0
209	A#-F#- E represents VII - 1
210	A#-F#- F represents II - 2
211	A#-G#- B represents III - 2
212	A#-G#- C represents IX - 2
213	A#-G#- D represents VII - 2
214	A#-G#- E represents VIII - 2
215	A#-G#- G represents V - 0
216	A#-G#-F# represents IX - 1
217	C#- A- D represents I - 0
218	C#- A- G represents VII - 1
219	C#- A-D# represents VIII - 0
220	C#- A-G# represents II - 2
221	C#- B- A represents IX - 1
222	C#- B- D represents III - 2
223	C#- B- F represents VII - 2
224	C#- B- G represents VIII - 2
225	C#- B-A# represents V - 0
226	C#- B-D# represents IX - 2
227	C#- C- F represents II - 0
228	C#- C- G represents VI - 0
229	C#- C-A# represents III - 1
230	C#- C-D# represents V - 1
231	C#- C-F# represents IV - 2
232	C#- C-G# represents I - 2
233	C#- E- D represents V - 2
234	C#- E-D# represents III - 0
235	C#- F-D# represents IX - 0
236	C#- G- D represents IV - 0
237	C#- G- F represents VIII - 1
238	C#- G-D# represents VII - 0
239	C#- G-F# represents VI - 2
240	C#-F#- D represents II - 1

Hexadecimal Scale Name to Type and Mode Conversion Chart:

241	C#-F#- F represents I - 1
242	C#-G#- D represents VI - 1
243	C#-G#- G represents IV - 1
244	D#- A- E represents IV - 0
245	D#- A- F represents VII - 0
246	D#- A- G represents VIII - 1
247	D#- A-G# represents VI - 2
248	D#- B- A represents VII - 1
249	D#- B- E represents I - 0
250	D#- B- F represents VIII - 0
251	D#- B-A# represents II - 2
252	D#- D- A represents VI - 0
253	D#- D- C represents III - 1
254	D#- D- F represents V - 1
255	D#- D- G represents II - 0
256	D#- D-A# represents I - 2
257	D#- D-G# represents IV - 2
258	D#- G- F represents IX - 0
259	D#-A#- A represents IV - 1
260	D#-A#- E represents VI - 1
261	D#-C#- A represents VIII - 2
262	D#-C#- B represents IX - 1
263	D#-C#- C represents V - 0
264	D#-C#- E represents III - 2
265	D#-C#- F represents IX - 2
266	D#-C#- G represents VII - 2
267	D#-F#- E represents V - 2
268	D#-F#- F represents III - 0
269	D#-G#- E represents II - 1
270	D#-G#- G represents I - 1
271	F#- A- G represents V - 2
272	F#- A-G# represents III - 0
273	F#- B- G represents II - 1
274	F#- B-A# represents I - 1
275	F#- C- B represents VI - 2
276	F#- C- G represents IV - 0
277	F#- C-A# represents VIII - 1
278	F#- C-G# represents VII - 0
279	F#- D- C represents VII - 1
280	F#- D- G represents I - 0
281	F#- D-C# represents II - 2
282	F#- D-G# represents VIII - 0
283	F#- E- C represents VIII - 2
284	F#- E- D represents IX - 1
285	F#- E- G represents III - 2
286	F#- E-A# represents VII - 2
287	F#- E-D# represents V - 0
288	F#- E-G# represents IX - 2

Hexadecimal Scale Name to Type and Mode Conversion Chart:

289	F#- F- B	represents IV - 2
290	F#- F- C	represents VI - 0
291	F#- F-A#	represents II - 0
292	F#- F-C#	represents I - 2
293	F#- F-D#	represents III - 1
294	F#- F-G#	represents V - 1
295	F#-A#-G#	represents IX - 0
296	F#-C#- C	represents IV - 1
297	F#-C#- G	represents VI - 1
298	G#- B- A	represents V - 2
299	G#- B-A#	represents III - 0
300	G#- C-A#	represents IX - 0
301	G#- D- A	represents IV - 0
302	G#- D- C	represents VIII - 1
303	G#- D-A#	represents VII - 0
304	G#- D-C#	represents VI - 2
305	G#- E- A	represents I - 0
306	G#- E- D	represents VII - 1
307	G#- E-A#	represents VIII - 0
308	G#- E-D#	represents II - 2
309	G#- G- C	represents II - 0
310	G#- G- D	represents VI - 0
311	G#- G- F	represents III - 1
312	G#- G-A#	represents V - 1
313	G#- G-C#	represents IV - 2
314	G#- G-D#	represents I - 2
315	G#-C#- A	represents II - 1
316	G#-C#- C	represents I - 1
317	G#-D#- A	represents VI - 1
318	G#-D#- D	represents IV - 1
319	G#-F#- A	represents III - 2
320	G#-F#- C	represents VII - 2
321	G#-F#- D	represents VIII - 2
322	G#-F#- E	represents IX - 1
323	G#-F#- F	represents V - 0
324	G#-F#-A#	represents IX - 2