A.) Pentatonic (5-Note) Scale:

This is the "simplest" musical scale. Use the octave, 4th and 5th as ***consonant*** intervals (as expressed by their respective frequency ratios) to build up the so-called pentatonic/5-note scale:

1. **Start with the note C, with frequency *f*. This is the note low-C.**
2. **The octave is another C with frequency 2*f*. This is the note high-C.**
3. **Go down a 5th from high-C (= going up a 4th from low-C). This is the note F, with frequency $^{4}/_{3}$ *f*.**
4. **Go up a 5th from low-C (= going down a 4th from high-C). This is the note G, with frequency $^{3}/_{2}$ *f*.**
5. **Go down a 4th from G (= going up a 5th from G and then down an octave). This is the note D, with frequency $^{3}/_{4} \bullet {}^{3}/_{2}$ *f* = $^{9}/_{8}$ *f*.**
6. **Go up a 5th from D. This is the note A, with frequency $^{3}/_{2} \bullet {}^{9}/_{8}$ *f* = $^{27}/_{16}$ *f*.**

The 5-Note Pentatonic Scale:

Note:	C	D	F	G	A	C
Frequency:	f	$\frac{9}{8}f$	$\frac{4}{3}f$	$\frac{3}{2}f$	$\frac{27}{16}f$	$2f$

FIG. 3. A pentatonic scale.

Relative Ratio (to fundamental): 1 $^{9}/_{8}$ $^{4}/_{3}$ $^{3}/_{2}$ $^{27}/_{16}$ **2**

Interval (Frequency Ratio): $^{9}/_{8}$ $^{32}/_{27}$ $^{9}/_{8}$ $^{9}/_{8}$ $^{32}/_{27}$

B.) Pythagorean (7-Note) Scale:

The pentatonic 5-note scale has 2 notes missing (E & B), so we continue:

7. **Go down a 4th from A. This is the note E, with frequency $^{3}/_{4} \bullet {}^{27}/_{16}$ *f* = $^{81}/_{64}$ *f*.**
8. **Go up a 5th from E. This is the note B, with frequency $^{3}/_{2} \bullet {}^{81}/_{64}$ *f* = $^{243}/_{128}$ *f*.**

The 7-Note Pythagorean Scale:

Note:	C	D	E	F	G	A	B	C
Frequency:	1	$\frac{9}{8}$	$\frac{81}{64}$	$\frac{4}{3}$	$\frac{3}{2}$	$\frac{27}{16}$	$\frac{243}{128}$	2
Interval:		$\frac{9}{8}$	$\frac{9}{8}$	$\frac{256}{243}$	$\frac{9}{8}$	$\frac{9}{8}$	$\frac{9}{8}$	$\frac{256}{243}$

FIG. 4. The Pythagorean scale.