



Overtone Series

Worksheet (Valve & Partial Pitch Tendencies)

Valve Pitch Tendencies

Enter OK, #, or b in each box below. Get extra credit by adding slightly (s), moderately (m), and very (v) to each tendency.

<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
OPEN	2	1	12 or 3 <input type="text"/>	23	13	123



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Valve Pitch Tendencies

Correct answers for pitch tendencies of valves.

The diagram illustrates the overtone series for various valve positions on a tuba. Each position is shown with a valve diagram, a symbol, and musical notation. The symbols are: 'ok' (brown circle), 's#' (red triangle), '*sb' (blue square), 'm#' (red triangle), and 'v#' (red triangle). The musical notation shows the overtone series for each position, with the bass clef indicating the fundamental pitch and the treble clef showing the overtones. The positions are labeled as OPEN, 2, 1, 12, 23, 13, and 123. The '12' position has a note 'or 3' with a '*sb' symbol below it.

Valve Position	Symbol	Diagram	Key Signature	Notes
OPEN	ok	Diagram 1	B-flat	Open
2	ok	Diagram 2	D	2
1	ok	Diagram 3	B-flat	1
12	s#	Diagram 4	D	12
23	*sb	Diagram 5	B-flat	23
13	m#	Diagram 6	B-flat	13
123	v#	Diagram 7	B-flat	123



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Partial Pitch Tendencies

The partial numbers are listed below each note. In the box provided, enter OK, #, or b for each partial.

A musical staff with a treble clef and a bass clef. The treble clef staff contains a series of notes: G4, A4, B4, C5, B4, A4, G4, F4, E4, D4, C4. The bass clef staff contains notes corresponding to the partial numbers: 3, 4, 5, 6, 7, 8, 10, 12, 14, 16. Each note in the bass clef staff has a red square box below it for an answer. The notes in the treble clef staff have accidentals: B4 is flat, C5 is natural, B4 is natural, A4 is natural, G4 is natural, F4 is natural, E4 is natural, D4 is flat, C4 is natural.

1 2



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Partial Pitch Tendencies

Correct answers for pitch tendencies for partials.

Note: Remember the mathematical rule - each partial multiplied or divided by 2 will give you the same pitch problem.

Example - 4th partial X 2 = 8th partial (both are ok in pitch) • 16th partial ÷ 2 = 8th partial (both are ok)

Example - 3rd partial X 2 = 6th partial (both are # in pitch) • 12th partial ÷ 2 = 6th partial (both are #)

3, 6, 12 = Sharp

5, 10 = Flat

7, 14 = Very Flat

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

1 2

1, 2, 4, 8, 16 = OK