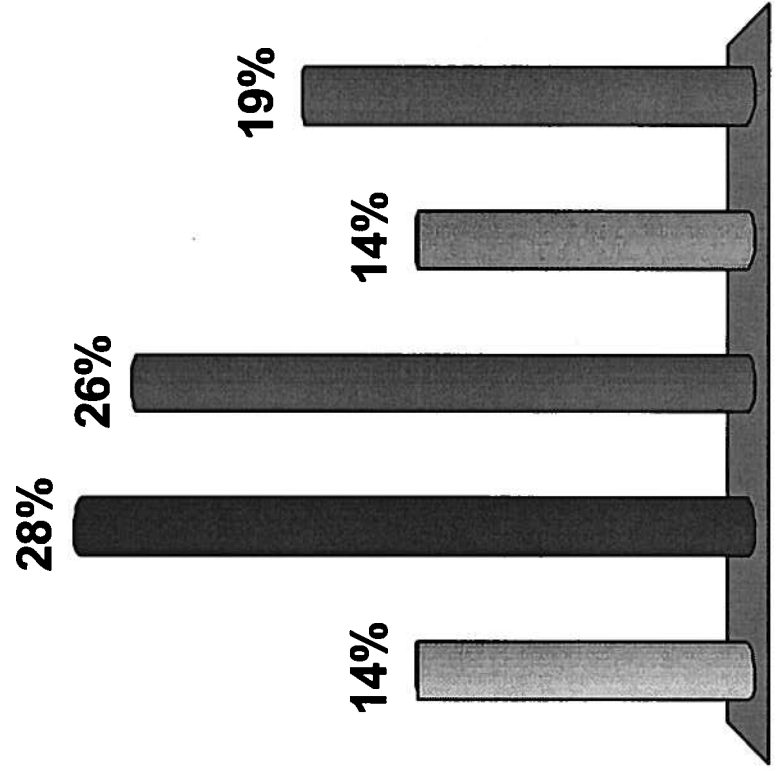


J GRIFFIN 12/8/07 (w CPTX.)

In the range from 500 to 1000 Hz, a cello string has standing waves with frequencies of 600, 800 and 1000 Hz, sequentially. What is the fundamental frequency of this string?

- a) 1000 Hz
- b) 800 Hz
- c) 600 Hz
- d) 400 Hz
- ✓ e) 200 Hz



The correct answer is e) 200 Hz:

- Because the n^{th} standing wave frequency is given by

$$f_n = n \cdot v/2L \quad (n = 1, 2, 3, \dots),$$

- the fixed interval ($v/2L$) separates successive standing wave frequencies.
- It follows that for our case ($v/2L$) = 200Hz,
- And that the fundamental frequency is
- $f_1 = 1 \cdot v/2L = 200$ Hz. Answer (e).