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 
  \[ f_n = \frac{n \cdot v}{2L} \ (n = 1, 2, 3, \ldots), \]
- the fixed interval \((v/2L)\) separates successive standing wave frequencies.
- It follows that for our case \((v/2L) = 200\text{Hz},\)
- And that the fundamental frequency is 
- \( f_1 = \frac{v}{2L} = 200 \text{ Hz}. \) Answer (e).