22 Two lasers emit light in a vacuum. One laser emits red light and the other emits green light.

Which property of the two laser beams **must** be different?

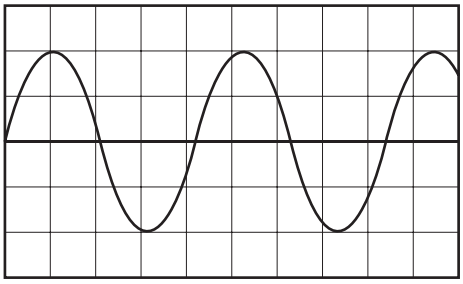
A amplitude

B frequency

C intensity

D speed

23 The diagram shows the screen of a cathode-ray oscilloscope (c.r.o.) displaying a wave.

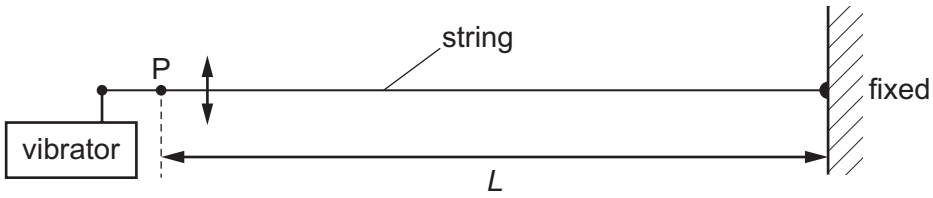


The time-base of the c.r.o. is set at 10 ms / division.

What is the frequency of the wave?

A 0.24 Hz **B** 4.2 Hz **C** 12 Hz **D** 24 Hz

24 A string is fixed at one end and the other end is attached to a vibrator. The frequency of the vibrator is slowly increased from zero. A series of stationary waves is formed. Assume that for a stationary wave there is a node at point P.



What are the first five wavelengths of the stationary waves that could be formed?

A $2\frac{L}{1}, 2\frac{L}{2}, 2\frac{L}{3}, 2\frac{L}{4}, 2\frac{L}{5}$

B $2\frac{L}{2}, 2\frac{L}{3}, 2\frac{L}{4}, 2\frac{L}{5}, 2\frac{L}{6}$

C $4\frac{L}{1}, 4\frac{L}{2}, 4\frac{L}{3}, 4\frac{L}{4}, 4\frac{L}{5}$

D $4\frac{L}{1}, 4\frac{L}{3}, 4\frac{L}{5}, 4\frac{L}{7}, 4\frac{L}{9}$