

- 22** A wave of amplitude A has an intensity I .

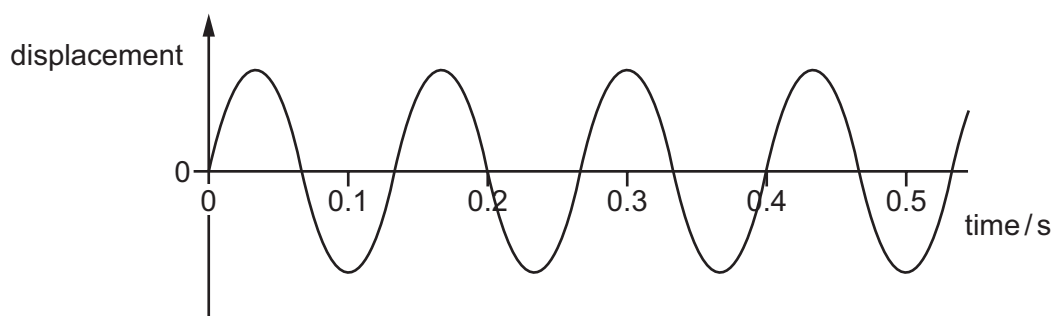
After passing through a certain medium, the wave has a new intensity of $\frac{I}{4}$.

What is the new amplitude of the wave?

- A** $2A$ **B** $\frac{A}{2}$ **C** $\frac{A}{4}$ **D** $\frac{A}{16}$

- 23** A wave travels along a coiled spring.

The graph shows the variation with time of the displacement of a point on the spring.

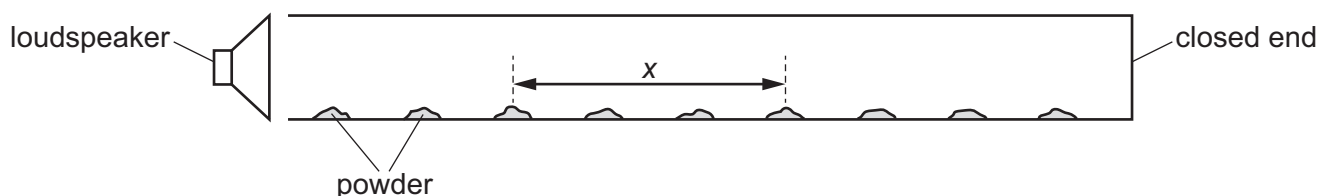


What is the frequency of the wave?

- A** 0.13 Hz **B** 0.20 Hz **C** 5.0 Hz **D** 7.5 Hz

- 24** A loudspeaker is set up at the open end of a closed tube containing powder.

When the loudspeaker produces sound of frequency 1200 Hz, a stationary wave is produced in the tube. The powder gathers at the nodes of the stationary wave as shown.



The speed of sound in the air is 336 m s^{-1} .

What is the value of distance x ?

- A** 28 cm **B** 42 cm **C** 84 cm **D** 112 cm