22 A wave of amplitude A has an intensity I.

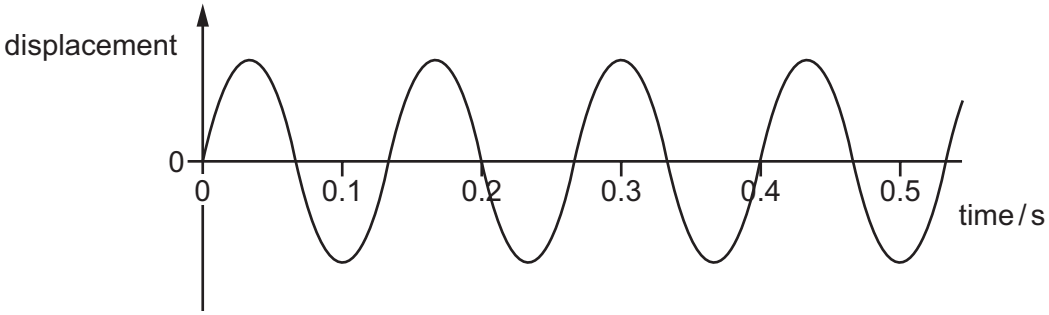
After passing through a certain medium, the wave has a new intensity of $\frac{I}{4}$.

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.

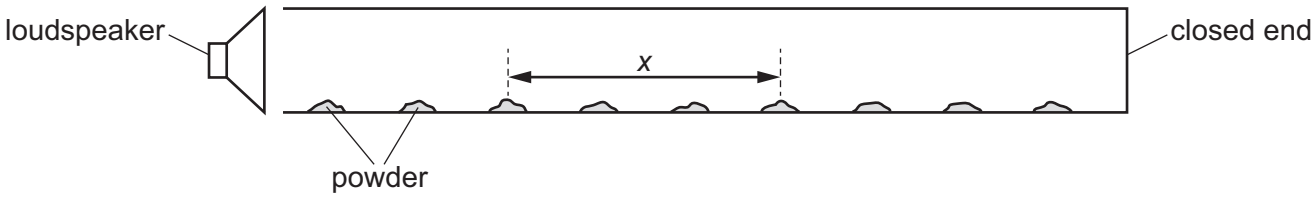


What is the frequency of the wave?

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