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- 1 A boy stands 150 m from a wall. He claps and when he hears the echo, he immediately claps again. He continues this for some time.

Another student has a stop-watch. She starts the watch on the first clap and stops it on the eleventh clap. The watch reads 10.0 s.

Which value do her measurements give for the speed of sound in air?

- A. 150 m/s B. 170 m/s C. 300 m/s D. 330 m/s

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- 2 (a) The graph in Fig. 2.1 represents a wave on a rope.

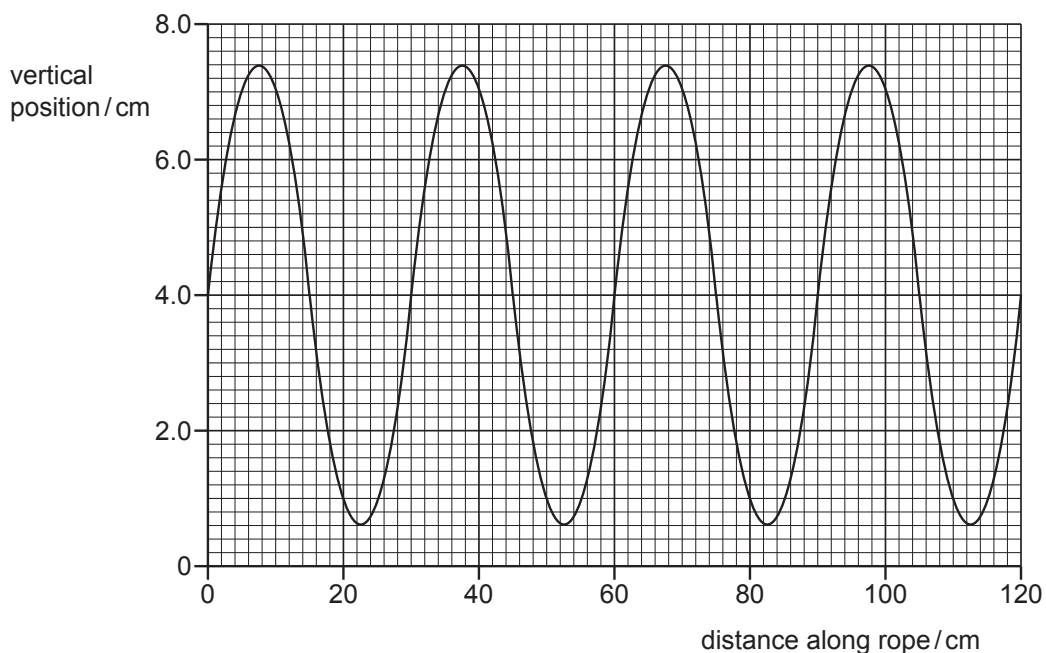


Fig. 2.1

Using Fig. 2.1 , determine

- (i) the amplitude of the wave,

amplitude = [1]

(ii) the wavelength of the wave.

wavelength = [1]

(b) A wave travelling on the surface of water has a wavelength of 2.5 cm and a speed of 8.0 cm / s.

Calculate the frequency of the wave.

frequency = [2]

(c) The wave in (b) approaches a barrier that has a large gap in its centre.

Fig. 2.2 shows the crests of the wave viewed from above.

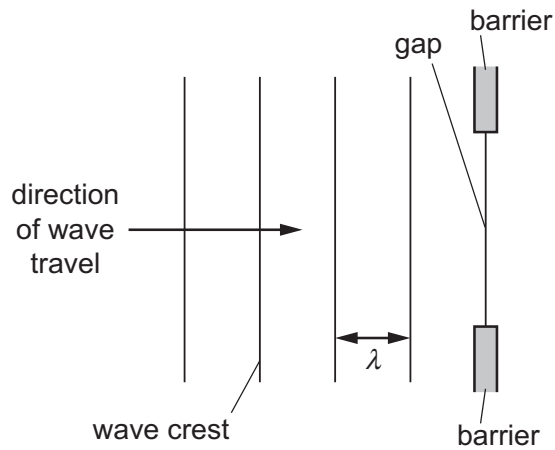


Fig. 2.2

The gap in the barrier is larger than the wavelength λ .

(i) On Fig. 2.2 , draw the pattern formed by three crests after the wave passes through the gap in the barrier. [2]