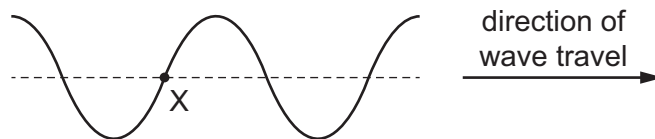


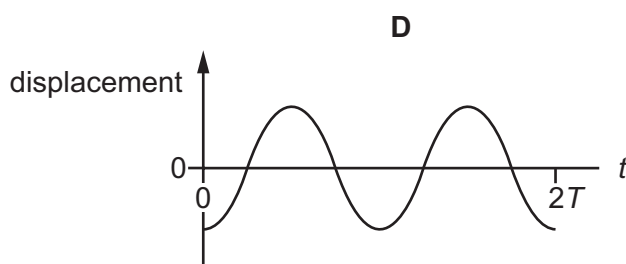
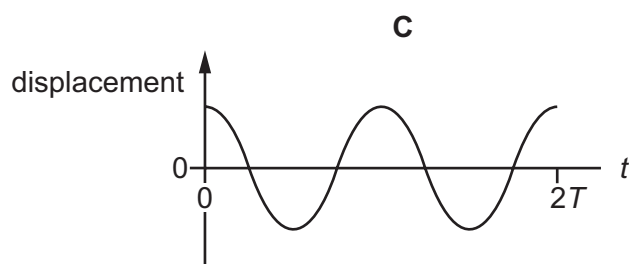
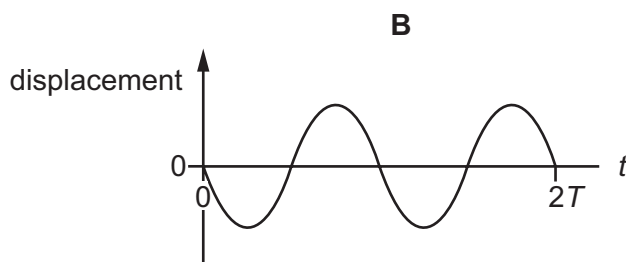
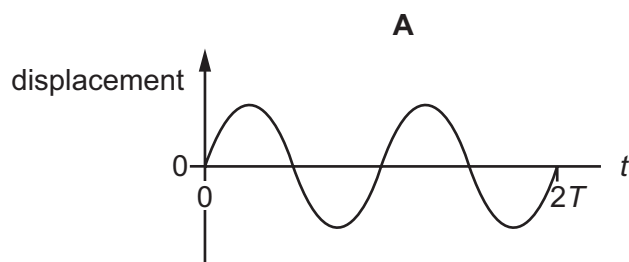
- 23** A transverse wave travels along a rope. The diagram shows the rope at time $t = 0$.

The wave is travelling from left to right. The period of the wave is T .



One particle of the rope is labelled X.

Which graph shows the variation with time of the displacement of particle X between $t = 0$ and $t = 2T$?



- 24** A jet aircraft travels at a speed of $0.80v$, where v is the speed of sound. The aircraft directly approaches a stationary observer. The frequency of sound emitted by the aircraft is 100 Hz.

Which frequency does the observer hear?

- A** 56 Hz **B** 180 Hz **C** 400 Hz **D** 500 Hz

- 25** A telescope detects and analyses some electromagnetic radiation of wavelength 2 cm.

Which type of telescope is it?

- A** microwave telescope
B optical telescope
C radio telescope
D X-ray telescope