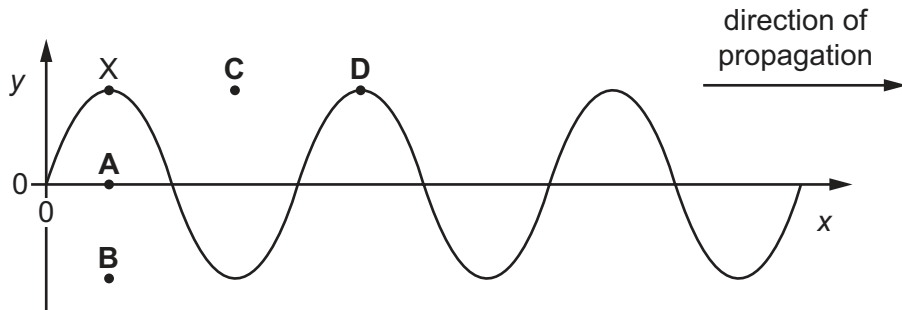


- 22** The variation with distance x of the displacement y of a transverse wave on a rope is shown at time $t = 0$.

The wave has a frequency of 0.5 Hz.

A point X on the rope is marked. The diagram shows the original position of X and four new positions.

What is the position of X at time $t = 1$ s?



- 23** A sound wave is detected by a microphone. The output from the microphone is connected to the