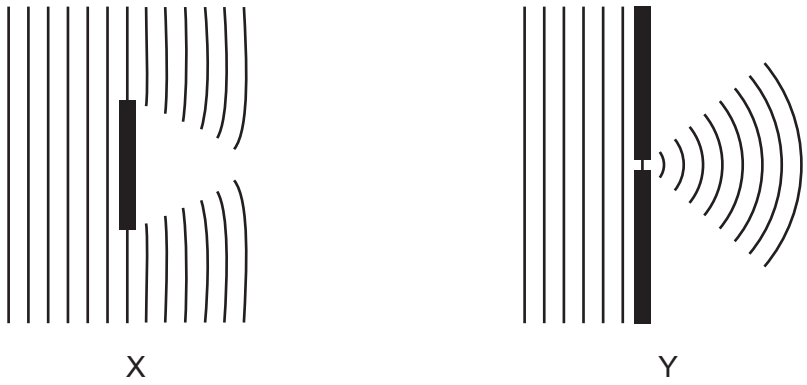
26 The warning signal on an ambulance has a frequency of 600 Hz. The speed of sound is 330 m s^{-1}. The ambulance is travelling with a constant velocity of 25 m s^{-1} towards an observer.

Which overall change in observed frequency takes place between the times at which the ambulance is a long way behind the observer and when it is a long way in front of the observer?

A 49 Hz **B** 84 Hz **C** 91 Hz **D** 98 Hz

27 Diagrams X and Y show the passage of water waves around an obstacle and through a gap.

The thick lines are barriers to the waves and each thin line represents a wavefront.



Which statement is correct?

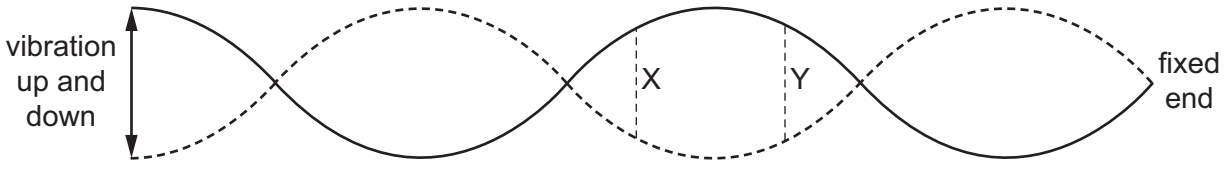
A Diagrams X and Y both illustrate diffraction.

B Diagrams X and Y both illustrate interference.

C Only diagram X illustrates interference.

D Only diagram Y illustrates diffraction.

28 The diagram shows a long rope fixed at one end. The other end is moved up and down, setting up a stationary wave.



What is the phase difference between the oscillations at X and at Y?

A 0 **B** 45° **C** 90° **D** 135°