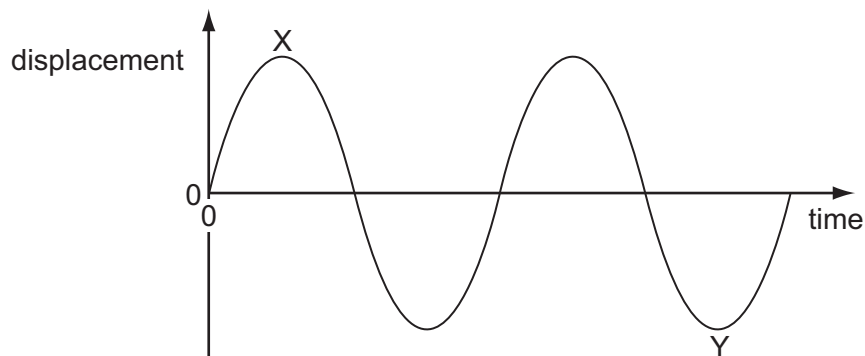


- 25 A displacement-time graph for a transverse wave is shown in the diagram.



The phase difference between X and Y can be expressed as $n\pi$.

What is the value of n ?

- A** 1.5 **B** 2.5 **C** 3.0 **D** 6.0
- 26 Continuous water waves are diffracted through a gap in a barrier in a ripple tank.
- Which change will cause the diffraction of the waves to increase?
- A** increasing the frequency of the waves
B increasing the width of the gap
C reducing the wavelength of the waves
D reducing the width of the gap
- 27 The interference patterns from a diffraction grating and a double slit are compared.

Using the diffraction grating, yellow light of the first order is seen at 30° to the normal to the grating.

The same light produces interference fringes on a screen 1.0 m from the double slit. The slit separation is 500 times greater than the line spacing of the grating.

What is the fringe separation on the screen?

- A** 2.5×10^{-7} m
B 1.0×10^{-5} m
C 1.0×10^{-3} m
D 1.0×10^{-1} m