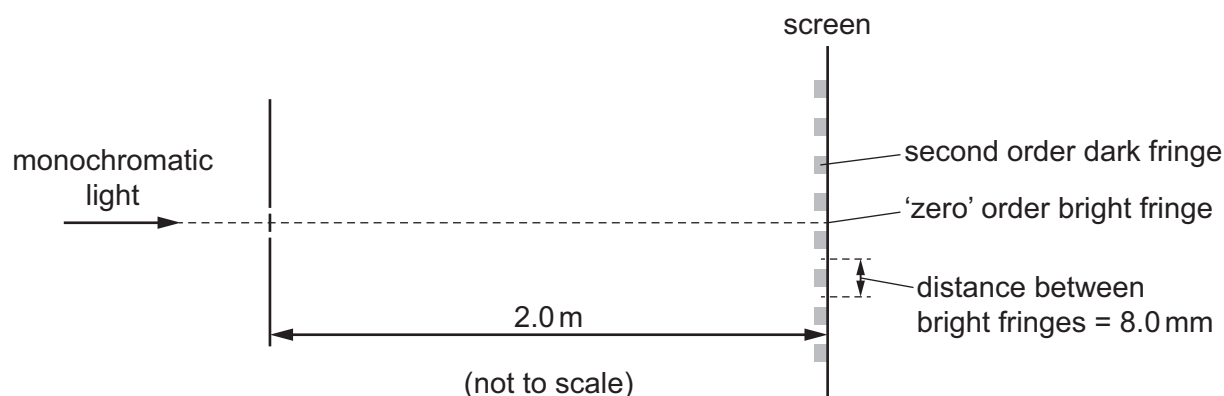


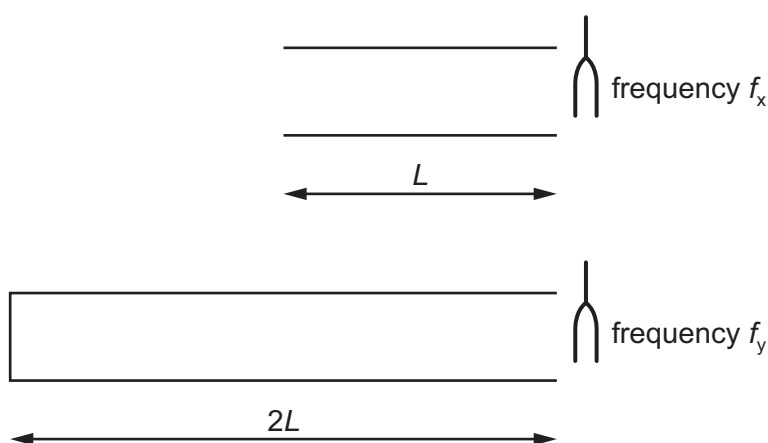
- 27 Monochromatic light is incident on a pair of narrow slits a distance of 0.1 mm apart. A series of bright and dark fringes are observed on a screen a distance of 2.0 m away. The distance between adjacent bright fringes is 8.0 mm.



What is the path difference between the light waves from the two slits that meet at the second order dark fringe?

- A $2.0 \times 10^{-7} \text{ m}$
 B $4.0 \times 10^{-7} \text{ m}$
 C $6.0 \times 10^{-7} \text{ m}$
 D $8.0 \times 10^{-7} \text{ m}$
- 28 A tube of length L is open at both ends. A stationary wave is set up in this tube when a tuning fork vibrating with frequency f_x is held at one end. This is the lowest frequency of stationary wave that can be formed in this tube.

Another tube of length $2L$ is closed at one end. A stationary wave is set up in this tube when a tuning fork vibrating with frequency f_y is held at the open end. This is the lowest frequency of stationary wave that can be formed in this tube.



Assume the end correction for each tube is negligible.

Which equation is correct?

- A $f_x = \frac{f_y}{4}$ B $f_x = \frac{f_y}{2}$ C $f_x = 2f_y$ D $f_x = 4f_y$