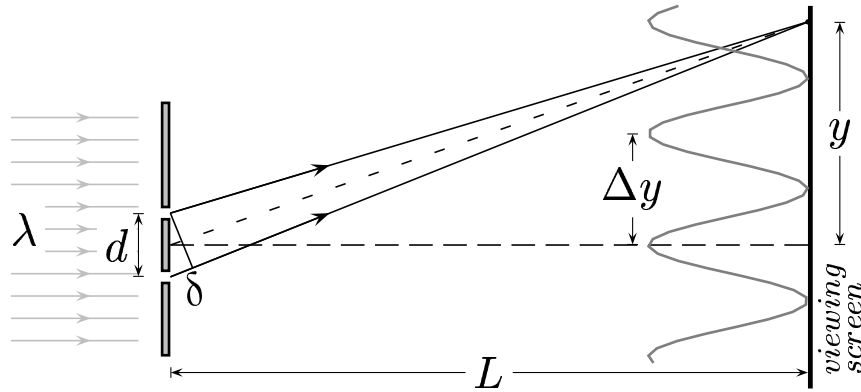


Definitions: λ , wavelength of light;
 L , slit-screen distance;
 Δy , spacing between adjacent maxima.

Statements: (a): A bigger L leads to a bigger Δy .
(b): A bigger λ leads to a bigger Δy .
(c): A bigger d leads to a bigger Δy .



Which set of statements is correct?

- A) (a) and (b) only.
- B) (a) and (c) only.
- C) (b) and (c) only.
- D) (a), (b) and (c).

Maxima occur at the path differences $\delta = 0, \lambda, 2\lambda, \dots$. So the adjacent path difference is at $\Delta\delta = \lambda$, where the small angle approximation gives

$$\frac{\Delta\delta}{d} = \frac{\Delta y}{L}, \text{ or } b = \Delta y = \frac{\lambda L}{d} .$$

This implies (a) is correct, (b) is correct and (c) is incorrect.

Answer **A**.

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