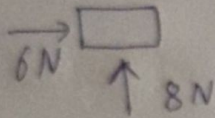


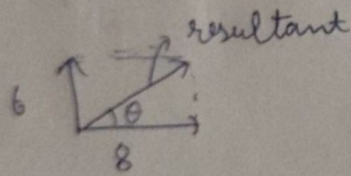
5.15 A body of mass 10kg is acted upon by two perpendicular forces, 6N and 8N. The resultant acceleration of the body is

- (a) 1 m s^{-2} at an angle of $\tan^{-1}\left(\frac{4}{3}\right)$ w.r.t. 6N force.
- (b) 0.2 m s^{-2} at an angle of $\tan^{-1}\left(\frac{4}{3}\right)$ w.r.t. 6N force.
- (c) 1 m s^{-2} at an angle of $\tan^{-1}\left(\frac{3}{4}\right)$ w.r.t. 8N force.
- (d) 0.2 m s^{-2} at an angle of $\tan^{-1}\left(\frac{3}{4}\right)$ w.r.t. 8N force.

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$$a = \frac{\sqrt{6^2 + 8^2}}{10} = \frac{10}{10} = 1 \text{ m s}^{-2}$$



$$\theta = \tan^{-1}\left(\frac{3}{4}\right) \text{ (with 8N)}$$

$$\frac{\pi}{2} - \theta = \tan^{-1}\left(\frac{4}{3}\right) \text{ (with 6N)}$$

Ans \Rightarrow a, c