

Answer on Question 49781, Physics, Other A force acts on 2 kg mass and gives it an acceleration of 3 m/s^2 . What acceleration is produced by the same force when acting on a mass of (a) 1 kg (b) 4 kg (c) how large is the force?

Solution

(c) Force is

$$F = ma = 2 \cdot 3 = 6\text{ N}$$

Hence

(a) acting on 1 kg it will produce acceleration of

$$a = \frac{F}{m_1} = \frac{6}{1} = 6\text{ m/s}^2$$

(a) acting on 4 kg it will produce acceleration of

$$a = \frac{F}{m_2} = \frac{6}{4} = 3/2\text{ m/s}^2$$