

A bus running at a speed 18 km/hr is stopped in 2.5 seconds by applying breaks calculate the retardation produced.

Retardation is the synonym of deceleration of bus. Deceleration is the rate at which the velocity of a body decreases with time:

$$a = \frac{\Delta v}{\Delta t}$$

$$\Delta v = 18 \frac{km}{h} \text{ - changing of speed}$$

$$\Delta t = 2.5 \text{ s - time of stopping}$$

Therefore:

$$a = \frac{\Delta v}{\Delta t} = \frac{18 \frac{km}{h}}{2.5s} = \frac{18 \frac{m}{3.6 \text{ s}}}{2.5s} = 2 \frac{m}{s^2}$$

$$\text{Answer: } 2 \frac{m}{s^2}$$