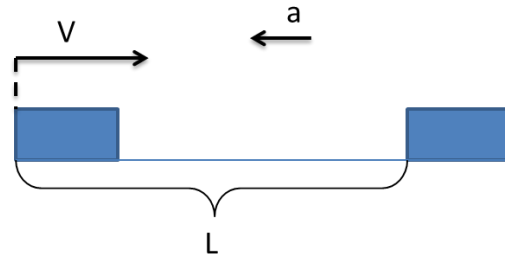


Answer on Question #43188, Physics, Mechanics | Kinematics | Dynamics

A car travelling at a speed of 54km/h is brought to rest in 90 seconds find the acceleration and distance travelled by car before coming to rest

Solution.



From definition of acceleration we obtain:

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

$$\Delta V = 54 \frac{km}{h} = 15 \frac{m}{s}; \Delta t = 90s$$

Thus:

$$a = \frac{15 \frac{m}{s}}{90s} \approx 0.167 \frac{m}{s^2}$$

Travelled distance:

$$L = \frac{a\Delta t^2}{2} = \frac{\Delta V\Delta t}{2} = \frac{15 \frac{m}{s} \cdot 90s}{2} = 675m$$

Answer:

$$a \approx 0.167 \frac{m}{s^2}$$

$$L = 675m$$