Answer on Question #40145

Physics – Mechanics | Kinematics | Dynamics

Question:

A car travelling with a speed of 2.7 meters per second changes its speed to 4.9 m/sec within 3 seconds. compute acceleration and distance

Solution:

Acceleration:

$$a = \frac{v_{fin} - v_{init}}{\Delta t} = \frac{4.9 - 2.7}{3} = 0.73 \frac{m}{s^2}.$$

Distance:

$$d = v_{init}t + \frac{at^2}{2} = 2.7 \cdot 3 + \frac{0.73 \cdot 3^2}{2} = 11.4 \ m.$$

Answer:

$$a = 0.73 \frac{m}{s^2}, d = 11.4 \ m.$$