

Answer on Question #59233-Physics –Mechanics-Relativity

A car accelerates from rest to a speed of 10 m/s in a time of 8 s what is the acceleration and how far will it go in this time ?

Solution

The acceleration is

$$a = \frac{v_f - v_i}{\Delta t} = \frac{10 - 0}{8} = 1.25 \frac{m}{s^2}.$$

The displacement is

$$d = v_i t + \frac{at^2}{2} = 0 \cdot 8 + \frac{1.25(8)^2}{2} = 40 \text{ m}.$$