Answer on Question #39570, Physics, Other

Question:

A car accelerates at a rate of 2.0 m/s2 from rest. What is the displacement?

Answer:

Velocity for uniformly accelerated motion equals:

$$v = at$$

where a is acceleration, t is time.

Displacement equals:

$$d = \int_o^t v(t')dt' = \int_o^t at'dt' = \frac{at^2}{2} = \frac{2\frac{m}{s^2}}{2}\, t^2 = t^2\, \left(\frac{m}{s^2}\right)$$

Answer: $t^2\, \left(\frac{m}{s^2}\right)$