**Answer on Question 65983, Physics, Mechanics**

**Question:**

A car accelerates from rest at 3 $m/s^2$ along a straight road. How far has the car travelled after 4 $s$?

**Solution:**

We can find the distance travelled by the car after 4 $s$ from the kinematic equation:

$$d = v_0 t + \frac{1}{2} a t^2,$$

here, $d$ is the distance travelled by the car, $v_0$ is the initial velocity of the car (since the car accelerates from rest it will be equal to zero), $a$ is the acceleration of the car and $t$ is the time.

Then, we get:

$$d = \frac{1}{2} a t^2 = \frac{1}{2} \cdot 3 \ \frac{m}{s^2} \cdot (4 \ s)^2 = 24 \ m.$$

**Answer:**

$d = 24 \ m.$