Answer on Question #73774, Physics / Mechanics | Relativity

A car accelerates uniformly from 0 to 72 km/hr in 11.5 seconds what is the acceleration of the car in m/s^2.

Solution:

The car moves with acceleration, it can be determined from the following equation

$$a = \frac{v_1 - v_0}{t}$$

Since $v_0 = 0$ m/s

We get

$$a = \frac{v_1}{t}$$

Convert km/hr to m/s

$$72\frac{km}{hr} = \frac{72\ km}{1\ hr} \times \frac{1000\ m}{1\ km} \times \frac{1\ hr}{3600\ s} = 20\ m/s$$

Finally

$$a = \frac{20\ m/s}{11.5\ s} = 1.74\ m/s^2$$

Answer: $\mathbf{1.74\ m/s^2}$