Answer on Question #43590, Physics, Other

A car travelling at a uniform velocity of 60km/h retards in 10 seconds and reaches a velocity of 45km/h. Find its retardation.

Solution:

Given:

$v_1 = 60\ \text{km/h} = 60/3.6 = 16.67\ \text{m/s},$

$v_2 = 45\ \text{km/h} = 45/3.6 = 12.5\ \text{m/s},$

$t = 10\ \text{s},$

$a = ?$

The acceleration (retardation) is

$$a = \frac{v_2 - v_1}{t_1}$$

$$a = \frac{12.5 - 16.67}{10} = -0.417\ \text{m/s}^2$$

Answer: $a = -0.42\ \text{m/s}^2.$