

Question 34498

An average acceleration in time interval between t_1 and t_2 is by definition $a = \frac{\Delta v}{\Delta t}$, where $\Delta v = v_2 - v_1$ and $\Delta t = t_2 - t_1$. So to say, this is the “speed of change in speed”.

Given $v_1 = 4.5 \frac{m}{s}$, $v_2 = 7 \frac{m}{s}$ and $\Delta t = 5 s$, obtain $a = \frac{v_2 - v_1}{\Delta t} = \frac{7 \frac{m}{s} - 4.5 \frac{m}{s}}{5 s} = 0.5 \frac{m}{s^2}$ - this is the car's average acceleration.