Answer on Question #63173, Physics / Other

A vehicle moving with a uniform acceleration of 2m/s^2 has a velocity of 4m/s at a certain time. What will it's velocity be …

Solution:

The acceleration is

$$a = \frac{v_f - v_i}{t}$$

The symbol *a* stands for the acceleration of the object. And the symbol v stands for the velocity of the object; a subscript of i after the v indicates that the velocity value is the initial velocity value and a subscript of f indicates that the velocity value is the final velocity value. The t is the time.

Thus,

$$v_f = v_i + at$$

After one second the velocity will be

$$v_1 = 4 + 2 \cdot 1 = 6\ \text{m/s}$$

After two seconds the velocity will be

$$v_1 = 4 + 2 \cdot 2 = 8\ \text{m/s}$$

and so on.

Answer: After one second the velocity will be $\mathbf{6\ m/s.}$