1/16/19 Acceleration

Acceleration is the rate at which an object's velocity changes.

Acceleration is a vector → direction is important.

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

a = ACCELERATION $\left(\frac{m/s}{s} \text{ OR } \frac{m}{s \cdot s} \text{ OR } m/s^2 \right)$

m/s/s

v = FINAL VELOCITY (m/s)

v_0 = INITIAL VELOCITY (m/s)

t = TIME (SEC)

Acceleration Problems #1

(1a) $v_0 = 7.5\ m/s \quad t = 3\ sec \quad v = 9.1\ m/s$

(1b) $a = ?$

(2) $a = \frac{(v - v_0)}{t}$

(3) $a = \frac{(9.1 - 7.5)}{3}$

(4) $a = \frac{1.6}{3} = .533\ \frac{m}{s^2}$ Down The Street

(5) Solve For t

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

$.533 = \frac{(9.1 - 7.5)}{t}$

$t \times .533 = \frac{1.6}{t} \times t$

$\frac{.533 \times t}{.533} = \frac{1.6}{.533}$

$t = 3.002\ sec$ ✓