$V = d/t$ $d = 6$ meters, $t = 2$ sec.

$V = 10\ m/s$ $d = 30m$ How long does it take?

1a. $V = 10\ m/s$, $d = 30m$

1b. $t = ?$

2. $V = \left(d/t\right)\frac{t}{1}$

$tV = d$ $\quad t = d/V$

$\frac{d}{V} = \frac{tV}{V}$

3. $t = 30m / 10\ m/s$

4. $t = 3s$

5. $V = \frac{30m}{3s} = 10\ m/s$ ✓

Mars Curiosity Rover 1000 m/s 15 seconds

How far did it travel?

1a. $V = 1000\ m/s$
$t = 15\ s$

1b. $d = ?$

2. $(V) = (d/t)\frac{t}{1}$

$t/1$

$d = tv$

3. $d = (15\ s)(1000\ m/s)$

4. $d = (15\ s)(1000\ m/s) = \boxed{15{,}000\ m}$

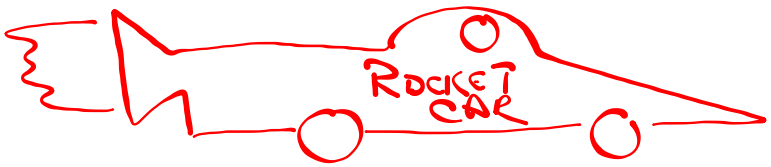
5. $V = \frac{15{,}000\ m}{15\ s} = 1000\ m/s$ ✓

Acceleration

- A change in something's Velocity

OPTIONS:

1) Speed up
2) Slowing Down
3) Changing Direction



INITIAL VELOCITY	FINAL VELOCITY	ACCELERATING ?
3500 m/s N	3501 m/s N	YES (SPED UP)
2008 m/s W	2008 m/s W	NO
14,225 m/s S	0 m/s	YES (SLOWING DOWN)
410 m/s ON TRACK	410 m/s ON TRACK	YES (DIRECTION IS CHANGING)
3500 m/s N	3500 m/s W	YES (DIRECTION IS CHANGING)

Formula for Finding the Acceleration of an Object:

$$\text{Acceleration} = \frac{(\text{Final Velocity} - \text{Initial Velocity})}{\text{Time}}$$

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