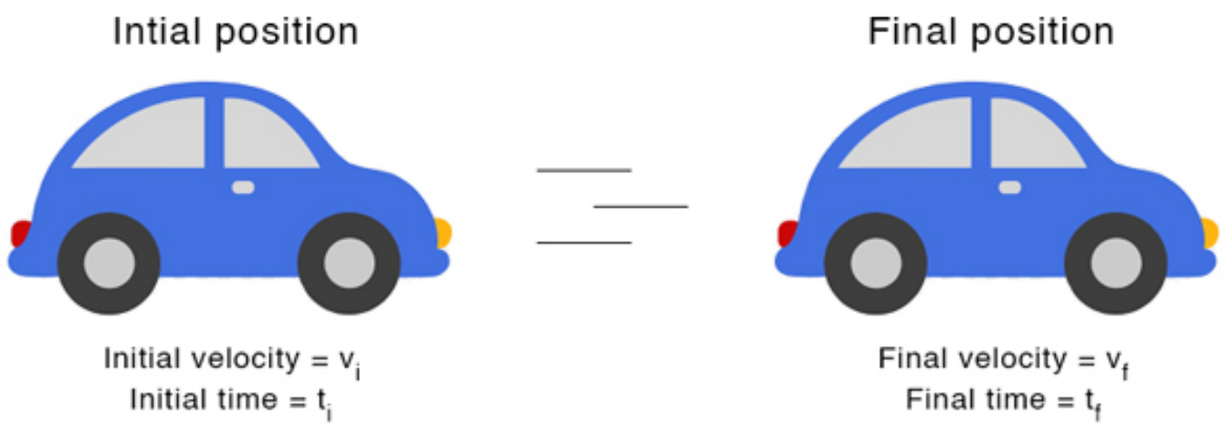
ACCELERATION WORKSHEETS

Name : **Date :**



$$\text{Acceleration (a)} = \frac{\text{Change in velocity } (\Delta v)}{\text{Change in time } (\Delta t)}$$

$$a = \frac{\Delta v}{\Delta t} = \frac{v_f - v_i}{t_f - t_i}$$

Directions: Answer the question below!

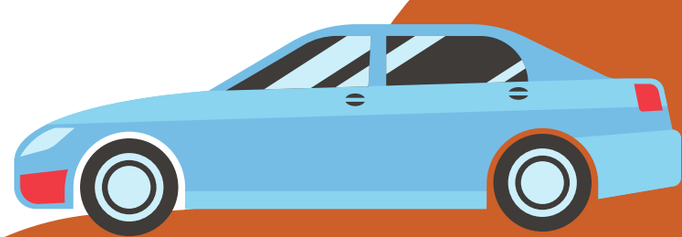
1. A roller coaster car rapidly picks up speed as it rolls down a slope. As it starts down the slope, its speed is 4 m/s. But 3 seconds later, at the bottom of the slope, its speed is 22 m/s. What is its average acceleration?

2. A cyclist accelerates from 0 m/s to 8 m/s in 3 seconds. What is his acceleration? Is this acceleration higher than that of a car which accelerates from 0 to 30 m/s in 8 seconds?

3. A car advertisement states that a certain car can accelerate from rest to 70 km/h in 7 seconds. Find the car's average acceleration.

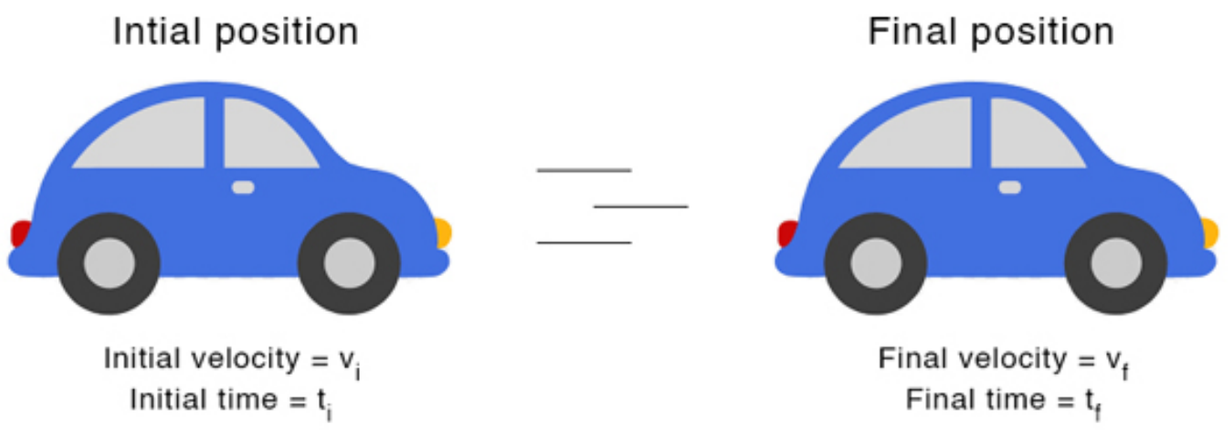
4. A lizard accelerates from 2 m/s to 10 m/s in 4 seconds. What is the lizard's average acceleration?

5. If a Ferrari, with an initial velocity of 10 m/s, accelerates at a rate of 50 m/s/s for 3 seconds, what will its final velocity be?



ANSWER KEY

ACCELERATION WORKSHEETS



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$$a = \frac{\Delta v}{\Delta t} = \frac{v_f - v_i}{t_f - t_i}$$

Directions: Answer the question below!

1. A roller coaster car rapidly picks up speed as it rolls down a slope. As it starts down the slope, its speed is 4 m/s. But 3 seconds later, at the bottom of the slope, its speed is 22 m/s. What is its average acceleration?

$$\frac{22\ m/s - 4\ m/s}{3\ s} = 6\ m/s^2$$

2. A cyclist accelerates from 0 m/s to 8 m/s in 3 seconds. What is his acceleration? Is this acceleration higher than that of a car which accelerates from 0 to 30 m/s in 8 seconds?

Cyclist $\frac{8\ m/s - 0\ m/s}{3\ s} = 2{,}6\ m/s^2$ **(lower)**

Car $\frac{30\ m/s - 0\ m/s}{8\ s} = 3{,}75\ m/s^2$

3. A car advertisement states that a certain car can accelerate from rest to 70 km/h in 7 seconds. Find the car's average acceleration.

$$\frac{240\ m/s - 0\ m/s}{7\ s} = 34{,}3\ m/s^2$$

4. A lizard accelerates from 2 m/s to 10 m/s in 4 seconds. What is the lizard's average acceleration?

$$\frac{10\ m/s - 2\ m/s}{4\ s} = 2\ m/s^2$$

5. If a Ferrari, with an initial velocity of 10 m/s, accelerates at a rate of 50 m/s/s for 3 seconds, what will its final velocity be?

$$2\ m/s^2 = \frac{Vf - 10\ m/s}{3\ s} \rightarrow 150\ m/s = Vf - 10\ m/s$$

$$Vf = 160\ m/s$$