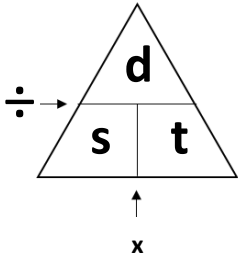


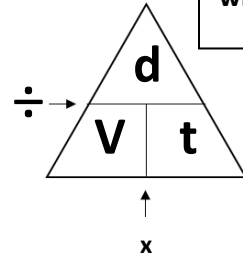
Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

## Speed and Velocity Practice Problems

Velocity = speed  
with a direction



YOU MUST SHOW YOUR WORK USING THE 4 STEP PROCESS.



1. What is the speed of a cat that traveled a total of 7.5 km in 1.5 hours?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):

2. What is the velocity of a plane that traveled the 4,500km from New York to Los Angeles in 5 hours?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):

3. Jeff took 45 minutes to bicycle to his grandmother's house 4km away. What was his speed?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):

4. If Jeff's grandmother lived west of Jeff, what was his velocity? \_\_\_\_\_

5. If a train traveling at a speed of 180km/hr takes 3.5 hours to travel between two stations, what is distance between the two stations?

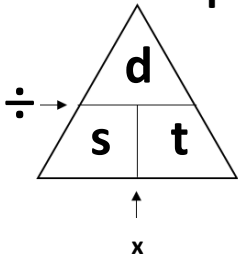
Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):

6. A car drives west at a speed of 120km/hr. How long will it take the car to travel 900 km?

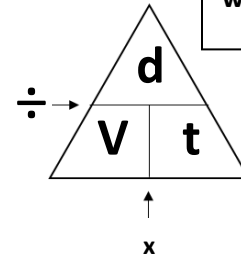
Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):

# Speed and Velocity Practice Problems = Key

Velocity = speed  
with a direction



YOU MUST SHOW YOUR WORK USING THE 4 STEP PROCESS.



1. What is the speed of a cat that traveled a total of 7.5 km in 1.5 hours?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):
<b>S = ?</b> <b>D = 7.5km</b> <b>T = 1.5hr</b>	<b>S = d/t</b>	<b>S = 7.5km/1.5hr</b>	<b>S = 5km/hr</b>

2. What is the velocity of a plane that traveled the 4,500km from New York to Los Angeles in 5 hours?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):
<b>S = ?</b> <b>D = 4500km</b> <b>T = 5hr</b>	<b>S = d/t</b>	<b>S = 4500km/5hr</b>	<b>S = 900km/hr</b> <b>West</b>

3. Jeff took 45 minutes to bicycle to his grandmother's house 4km away. What was his speed?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):
<b>S = ?</b> <b>D = 4km</b> <b>T = 45</b>	<b>S = d/t</b>	<b>S = 4km/45min</b>	<b>S = 0.09km/min</b>

4. If Jeff's grandmother lived west of Jeff, what was his velocity? 0.09 km/min West

5. If a train traveling at a speed of 180km/hr takes 3.5 hours to travel between two stations, what is distance between the two stations?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):
<b>S = 180km/hr</b> <b>D = ?</b> <b>T = 3.5hr</b>	<b>D = s*t</b>	<b>D =</b> <b>180km/hr*3.5</b> <b>hr</b>	<b>D = 630 km</b>

6. A car drives west at a speed of 120km/hr. How long will it take the car to travel 900 km?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):
<b>S = 120km/hr</b> <b>D = 900 km</b> <b>T = ?</b>	<b>T = d/s</b>	<b>T =</b> <b>900km/120km/hr</b>	<b>T = 7.5hr</b>

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_ Science #: \_\_\_\_\_

## Practice: Acceleration

$$a = \frac{V_f - V_i}{t}$$

YOU MUST SHOW YOUR WORK USING THE 4 STEP PROCESS.

1. A roller coaster's velocity at the top of the hill is 10 m/s. Two seconds later it reaches the bottom of the hill with a velocity of 26 m/s. What is the acceleration of the coaster?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):

2. A roller coaster is moving at 25 m/s at the bottom of a hill. Three seconds later it reaches the top of the hill moving at 10 m/s. What was the acceleration of the coaster?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):

3. A swimmer speeds up from 1.1 m/s to 1.3 m/s during the last 20 seconds of the race. What is the acceleration of the swimmer?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):

## Practice: Acceleration KEY

1. A roller coaster's velocity at the top of the hill is 10 m/s. Two seconds later it reaches the bottom of the hill with a velocity of 26 m/s. What is the acceleration of the coaster?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):
$V_f = 26 \text{ m/s}$ $V_i = 10 \text{ m/s}$ $t = 2 \text{ s}$	$a = \frac{(V_f - V_i)}{t}$	$a = \frac{(26 \text{ m/s} - 10 \text{ m/s})}{2 \text{ s}}$	$a = 8 \text{ m/s}^2$

2. A roller coaster is moving at 25 m/s at the bottom of a hill. Three seconds later it reaches the top of the hill moving at 10 m/s. What was the acceleration of the coaster?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):
$V_f = 10 \text{ m/s}$ $V_i = 25 \text{ m/s}$ $t = 3 \text{ s}$	$a = \frac{(V_f - V_i)}{t}$	$a = \frac{(10 \text{ m/s} - 25 \text{ m/s})}{3 \text{ s}}$	$a = -5 \text{ m/s}^2$

3. A swimmer speeds up from 1.1 m/s to 1.3 m/s during the last 20 seconds of the race. What is the acceleration of the swimmer?

Given (w/ Units):	Formula:	Substitution (w/ Units):	Answer (w/ Units):
$V_f = 1.3 \text{ m/s}$ $V_i = 1.1 \text{ m/s}$ $t = 20 \text{ s}$	$a = \frac{(V_f - V_i)}{t}$	$a = \frac{(1.3 \text{ m/s} - 1.1 \text{ m/s})}{20 \text{ s}}$	$a = 0.01 \text{ m/s}^2$