Name: _____

This skill sheet will allow you to practice solving speed problems. To determine the speed of an object you need to know the distance traveled and the time taken to travel that distance. However, by rearranging the formula for speed, v = d/t, you can also determine the distance traveled or the time it took for the object to travel that distance, if you know the speed. For example,

Equation...	Gives you...	If you know...
$v = d/t$	speed	time and distance
$d = v \times t$	distance	speed and time
$t = d/v$	time	distance and speed

1. Solving problems

Solve the following problems using the speed equation. The first problem is done for you.

1. What is the speed of a cheetah that travels a total of 112.0 meters in 4.0 seconds?

$$\text{speed} = \frac{d}{t} = \frac{112.0 \text{ m}}{4.0 \text{ sec}} = \frac{28 \text{ m}}{\text{sec}}$$

2. A bicycle rider travels 60.0 kilometers in 3.5 hours. What is the cyclist's average speed?

_____

3. What is the average speed of the car that traveled a total of 300.0 miles in 5.5 hours?

_____

4. How much time would it take for the sound of thunder to travel 1,500 meters if sound travels at the speed of 330 m/s?

_____

5. How much time would it take for an airplane to reach its destination if it traveled at an average speed of 790 kilometers/hour for a distance of 4,700 kilometers?

_____

6. How far can a person run in 15 minutes if they run at an average speed of 16 km/hr? (Hint: Remember to convert minutes to hours)

7. A snail can move approximately 0.30 meters per minute. How many meters can the snail travel is 15 minutes?

2. Unit conversion

So far we have been mostly using the metric system for our problems. Now let's convert to the English System of measurement so that we can better understand the meaning of our answers to the questions above. Remember that there are 1,609 meters in one mile. Don't forget to include all units and cancel appropriately. *These questions refer to problems in part 1.*

1. In problem 1.1, what is the speed of the cheetah in miles/hour?

$$\frac{28 \text{ m}}{\text{sec}} \times \frac{1 \text{ mile}}{1609 \text{ m}} \times \frac{3600 \text{ sec}}{1 \text{ hour}} = \frac{63 \text{ miles}}{\text{hour}}$$

2. In problem 1.5, what is the speed of the airplane in miles/ hour?

3. In problem 1.6, what is the distance traveled in miles?

4. You now know that there are 1,609 meters in a mile. The number of feet in a mile is 5,280 feet. Use these equalities to answer the following problems.
   a. How many centimeters equals one inch?

   b. What is the speed of the snail in problem 1.7 in inches per minute?