Determining Speed (Velocity)

Speed is a measure of how fast an object is moving or traveling. **Velocity** is a measure of how fast an object is traveling in a certain direction. Both speed and velocity include the distance traveled compared to the amount of time taken to cover this distance.

$$speed = \frac{distance}{time} \qquad velocity = \frac{distance}{time} \text{ in a specific direction}$$

Solve each problem.

1. What is the velocity of a car that traveled a total of 75 kilometers north in 1.5 hours? _____

2. What is the velocity of a plane that traveled 3,000 miles from New York to California in 5.0 hours? _____

3. John took 45 minutes to bicycle to his grandmother's house, a total of four kilometers. What was his velocity in km/h? _____

4. It took 3.5 hours for a train to travel the distance between two cities at a velocity of 120 miles/h. How many miles lie between the two cities? _____

5. How long would it take for a car to travel a distance of 200 kilometers if it is traveling at a velocity of 55 km/h? _____

6. A car is traveling at 100 km/h. How many hours will it take to cover a distance of 750 km? _____

7. A plane traveled for about 2.5 hours at a velocity of 1,200 km/h. What distance did it travel? _____

8. A girl is pedaling her bicycle at a velocity of 0.10 km/min. How far will she travel in two hours? _____

9. An ant carries food at a speed of 1 cm/s. How long will it take the ant to carry a cookie crumb from the kitchen table to the ant hill, a distance of 50 m? Express your answer in seconds, minutes, and hours. _____

10. The water in the Buffalo River flows at an average speed of 5 km/h. If you and a friend decide to canoe 16 kilometers down the river, how many hours and minutes will it take? _____