

## Speed & Acceleration Problems

1. The formula for finding speed is:  $\text{speed} = \frac{\text{distance}}{\text{time}}$

Find the speed of the following: Show work

- a. An automobile covers 100 miles in two hours.
- b. A trip takes 2.5 hours to travel 25 miles.
- c. A distance of 2000 miles is covered in 5 hours, 15 minutes.

2. The formula for finding distance is:  $\text{distance} = \text{speed} \times \text{time}$ . Find the distance covered in each of the following: SHOW WORK.

- a. A car traveling 20 mph takes 3.5 hours to arrive at its destination.
- b. A bus travels at 60 mph for a period of 15 minutes.
- c. An airplane traveling at 400 mph takes 4 hours and 45 minutes to make the trip.

3. The formula for finding the amount of time to travel a given distance is:  $\text{time} = \frac{\text{distance}}{\text{speed}}$

Find the time it takes to make the following trips: SHOW WORK.

- a. A car travels at a speed of 50 mph and covers a distance of 175 miles.
- b. A motorcycle travels at a speed of 50 mph to cover a distance of 315 miles.
- c. A bus travels at a speed of 55 mph to cover a distance of 485 miles.

4. The formula for finding acceleration is:  $a = \frac{\Delta \text{velocity}}{\text{time}}$

Find the acceleration of the following: SHOW WORK.

- a. A car travels south at 30 mph, and 5 minutes later is going south at 35 mph.
- b. A bus travels north at 40 mph, and 10 minutes later it is traveling north at 60 mph.

## SIMPLE ACCELERATION PROBLEMS

Acceleration is the rate at which the velocity of an object changes. One way to find acceleration is to find the change in velocity and divide by the amount of time it took for the velocity to change. The formula is:

$$A = \frac{V_f - V_i}{\text{time}} = \frac{\text{final velocity} - \text{initial velocity}}{\text{time}}$$

Final velocity	Initial velocity	Time	Acceleration
55 mph	25 mph	6 minutes	1.
30 mph	0 mph	5 minutes	2.
30 mph	10 mph	10 seconds	3.
40 mph	20 mph	4 seconds	4.
100 mph	30 mph	7 minutes	5.
80 mph	20 mph	30 seconds	6.
72 mph	0 mph	8 minutes	7.
63 mph	23 mph	2 minutes	8.
58 mph	40 mph	6 seconds	9.
35 mph	20 mph	5 seconds	10.
28 mph	0 mph	7 seconds	11.
33 mph	15 mph	9 seconds	12.
21 mph	2 mph	3 seconds	13.
50 mph	0 mph	25 seconds	14.
22 mph	10 mph	12 seconds	15.