

Motion Problems Homework Sheet

Name: _____

Date: _____

Int. Alg. – Period: _____ (1st Qrtr)

M _____

Refer to notes if you have difficulties setting up the problem.

1. Find the average rate for the entire trip if a car travels:
 - a. 1 hour at 40 mph and 1 hour at 50 mph
 - b. 1 hour at 30 mph, 1 hour at 40 mph, and 1 hour at 50 mph
 - c. 1 hour at 30 mph and 2 hours at 36 mph
 - d. 2 hours at 40 mph and 3 hours at 50 mph
2. Two cars started from the same point and traveled for x hours in opposite directions at rates of 30 mph and 40 mph.
 - a. Represent in terms of x the distance traveled by the slow car.
 - b. Represent in terms of x the distance traveled by the fast car.
 - c. Represent how far apart the two cars were at the end of x hours.
 - d. Write an open sentence which would indicate that the two cars were 140 miles apart at the end of x hours.
3. Saratoga and New York are 180 miles apart. A truck traveled from New York toward Saratoga at the rate of 65 miles per hour. Another truck traveled from Saratoga toward New York at the rate of 55 miles per hour. How many miles did each travel before they met?
4. Two planes started at the same time from the same airport and flew in opposite directions. One flew 60 miles per hour faster than the other. In 5 hours, they were 5,300 miles apart. Find the rate of each plane.
5. Two trains started from the same station at the same time and traveled in opposite directions. After traveling 10 hours, they were 1,400 miles apart. The rate of the fast train exceeded the rate of the slow train by 5 miles per hour. Find the rate of each train.
6. Two trains started from the same place at the same time and traveled in opposite directions at rates that differed by 20 miles per hour. In 5 hours, they were 650 miles apart. Find the rate of each train.
7. Two planes left at the same time from two airports which are 4,500 miles apart and flew toward each other. In 5 hours, they passed each other. The rate of the fast plane was twice the rate of the slow plane. Find the rate of each plane.
8. Roland made a trip of 450 miles in 8 hours. Before noon he averaged 60 miles per hour, and after noon he averaged 50 miles per hour. At what time did he begin his trip and when did he end it?
9. Two planes started at the same time from two airports that are 3,600 kilometers apart and flew toward each other. One plane flew at 792 kilometers per hour, and the other flew at 888 kilometers per hour. In how many hours were the planes still 240 kilometers apart?
10. At 3 P.M. two ships started sailing toward each other from ports which were 265 miles apart at average rates of 18 and 23 miles per hour. At what time were the ships still 60 miles apart?
11. At 9:00 A.M. two cars started from the same town and traveled north on the same road. One car averaged 45 miles per hour, and the other car averaged 40 miles per hour. In how many hours were the cars 30 miles apart?
12. At 6:00 A.M. two planes started from the same airport and flew west. One plane averaged 520 miles per hour, and the other plane averaged 600 miles per hour. At what time were the planes 280 miles apart?
13. A ship left a port and sailed east at the rate of 20 miles per hour. One hour later, a second ship left the same port at the rate of 25 miles per hour, also traveling east. In how many hours did the second ship overtake the first ship?