Mrs. Mollet /Mathematics Instructor /Word Problems

Motion Problems

Do ALL Work with paper and pencil */it is helpful to sketch a picture and make a chart*
NO CALCULATOR use /Check answers below

1. Two cars start from the same point at the same time and travel in opposite directions. The slow car travels 28 mph, and the fast car travels 35 mph. In how many hours will the cars be 252 miles apart ?

2. A passenger train and a freight train start at the same time from stations which are 405miles apart and travel toward each other. The rate of the passenger train is twice the rate of the freight train. In 3 hours, the trains pass each other. Find the rate of each train.

3. Two trains started at the same time from stations which were 360 miles apart and traveled toward each other. The rate of the fast train exceeded the rate of the slow train by 10mph. At the end of 2 hours, the trains were still 120 miles apart. Find the rate of each train.

4. Martin left his home by car, traveling on a certain road at the rate of 30 mph. Two hours later, his brother William left the home and started after him on the same road, traveling at the rate of 45 mph. In how many hours did William overtake Martin?

5. How far can a man drive out into the country at the average rate of 40 mph and return over the same road at the average rate of 30 mph if he travels a total of 7 hours?

6. Robert travels 150 miles in the same time that Joseph travels 250 miles. If Robert's rate if 20 mph less than Joseph's rate, find Robert's rate.

7. Two trains are 515 miles apart. At 10am they start traveling toward each other at average rates of 48 and 55 mph. At what time will they pass each other?

8. 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 2800 miles apart. Find the rate of each plane.

9. A ship left a port and sailed east at the rate of 20 mph. One hour later, a second ship left the same port at the rate of 25 mph, also traveling east. In how many hours did the second ship overtake the first ship?

10. Two trains started from the same place at the same time and traveled in opposite directions at rates which differed by 20 mph. In 5 hours, they were 500 miles apart. Find the rate of each train.

Answers:

1. 4 hours
2. rate of the freight train 45 mph /rate of the passenger train 90 mph
3. rate of the slow train 55 mph /rate of the fast train 65 mph
4. William overtook Martin in 4 hours
5. he can travel 120 miles out into the country
6. 30 mph
7. 3pm
8. rate of the slow plane 250 mph /rate of the fast plane 310 mph
9. 4 hours
10. rate of slow train 40 mph /rate of fast train 60 mph