

Name: _____

Formulas and Applications

Exercise 1: Two automobiles start from the same place and travel in opposite directions, one averaging 45 miles per hour and the other 30 miles per hour. In how many hours will they be 900 miles apart?

Exercise 2: Two men, A and B, start toward each other at the same time from points 510 miles apart. If they travel 40 and 45 miles an hour respectively, in how many hours will they meet?

Exercise 3: Jones and Brown start from two points, which are 375 miles apart and travel toward each other. The latter travels twice as fast as the former. They meet in 5 hours. Find the rates per hour.

Exercise 4: A man rides out into the country at a uniform rate of 30 miles per hour. He rests 2 hours and then rides back at 20 miles per hour. He is gone 5 hours. How far did he go?

Exercise 5: A motorboat starts out and travels 9 miles an hour. In 3 hours another motorboat traveling 18 miles an hour starts out to overtake the first one. In how many hours will the second boat overtake the first?

Exercise 6: A freight train is traveling 30 miles per hour. An automobile starts out from the same place 1 hour later and overtakes the train in 3 hours. What was the rate of the automobile?

Exercise 7: C and D start from two points 480 miles apart and travel toward each other. They meet in 8 hours. If C travels 6 miles per hour faster than D, find their rates.

Exercise 8: A grocer wishes to mix \$120 tea with \$1.50 tea to make a mixture of 60 pounds worth \$1.30 a pound. How many pounds of each kind must he mix?

Exercise 9: A merchant wishes to mix walnuts selling at \$2.25 a pound with almonds selling at \$2.40 a pound so as to make a mixture of 120 pounds worth \$2.30 a pound. How many pounds of each kind of nuts must he use?

Exercise 10: How much water must be added to 12 quarts of a 10% solution of salt and water to reduce to a 6% solution?

Exercise 11: A pharmacist has 4 quarts of a 15% solution of iodine. How much alcohol must he add to reduce it to a 10% solution?