

Section 9.4 Focus Exercises

For each, set up a legend with two different variables, set up two equations (use a chart for assistance), solve the system of equations and write a sentence answering the question.

Do each of these on your own paper.

1. The length of a rectangle is 1 inch more than twice the width, and the perimeter of the rectangle is 80 inches. What are the dimensions of the rectangle?
2. Tom needs to cut a 6 foot board (72 inches) into two pieces. The longer piece is to be 12 inches less than three times the shorter piece. What will be the lengths of the two pieces?
3. Jonas and Cleo were competing with each other to see who could raise the most money for the American Heart Association. Jonas's amount raised was \$3,000 more than *half* of what Cleo raised, and together they raised a total of \$9,000. How much money did each of them raise for the American Heart Association?
4. Bart lives in a remote location on a river, his main source of transportation. The other day he spent 5 hours traveling 30 miles upstream in his motorboat for his monthly supplies. Then, instead of going straight home, he spent 2 hours traveling 24 miles downstream to visit a friend. What was the speed of his motorboat and the speed of the current?
5. A tugboat was traveling up the Mississippi river from its dock to a port 30 miles north. Traveling upstream (north) the tugboat took 6 hours to make the trip. The return trip, though, took only 3 hours. What was the speed of the tugboat and the speed of the current?

6. Andy was racing his bicycle on a straight 8 mile course. Unfortunately, going east there was a head wind, but going west there was a tailwind (same wind, he just turned around). If it took him 30 minutes ($\frac{1}{2}$ hour) to ride east and only 20 minutes ($\frac{1}{3}$ hour) to ride west, what was Andy's average cycling speed and the average wind speed?

7. One day, Jack had to fly 500 miles eastward to meet a client and then 350 miles westward to meet with another client. On the trip east, he flew against the wind and it took him 4 hours to reach his destination. On the flight west, he flew with the wind and it took him only 2 hours. What was Jack's average flying speed and the average wind speed?

8. Ashley has 23 coins in her purse, all dimes and quarters. The coins have a total value of \$3.80. How many of each coin does she have?

9. The local Civic Light Opera was holding a dress rehearsal performance of *Fiddler on a Hot Tin Roof*. They sold orchestra seat tickets for \$6.00 apiece and loge seats for \$4.00 apiece. If 80 people attended the dress rehearsal, and the receipts totaled \$420.00, how many orchestra seats and how many loge seats were sold?

10. At a little league game, 50 people bought lunch at the concession stand. Some bought the cheeseburger meal for \$4.00 and the rest bought the hot dog meal for \$3.00. If the total lunch receipts were \$185, how many of each meal was purchased?