

Practice 2-5

Equations and Problem Solving

Write and solve an equation for each situation.

1. A passenger train's speed is 60 mi/h, and a freight train's speed is 40 mi/h. The passenger train travels the same distance in 1.5 h less time than the freight train. How long does each train take to make the trip?
2. Lois rode her bike to visit a friend. She traveled at 10 mi/h. While she was there, it began to rain. Her friend drove her home in a car traveling at 25 mi/h. Lois took 1.5 h longer to go to her friend's than to return home. How many hours did it take Lois to ride to her friend's house?
3. May rides her bike the same distance that Leah walks. May rides her bike 10 km/h faster than Leah walks. If it takes May 1 h and Leah 3 h to travel that distance, how fast does each travel?
4. The length of a rectangle is 4 in. greater than the width. The perimeter of the rectangle is 24 in. Find the dimensions of the rectangle.
5. The length of a rectangle is twice the width. The perimeter is 48 in. Find the dimensions of the rectangle.
6. At 10:00 A.M., a car leaves a house at a rate of 60 mi/h. At the same time, another car leaves the same house at a rate of 50 mi/h in the opposite direction. At what time will the cars be 330 miles apart?
7. Marla begins walking at 3 mi/h toward the library. Her friend meets her at the halfway point and drives her the rest of the way to the library. The distance to the library is 4 miles. How many hours did Marla walk?
8. Fred begins walking toward John's house at 3 mi/h. John leaves his house at the same time and walks toward Fred's house on the same path at a rate of 2 mi/h. How long will it be before they meet if the distance between the houses is 4 miles?
9. A train leaves the station at 6:00 P.M. traveling west at 80 mi/h. On a parallel track, a second train leaves the station 3 hours later traveling west at 100 mi/h. At what time will the second train catch up with the first?
10. It takes 1 hour longer to fly to St. Paul at 200 mi/h than it does to return at 250 mi/h. How far away is St. Paul?
11. Find three consecutive integers whose sum is 126.
12. The sum of four consecutive odd integers is 216. Find the four integers.
13. A rectangular picture frame is to be 8 in. longer than it is wide. Dennis uses 84 in. of oak to frame the picture. What is the width of the frame?
14. Each of two congruent sides of an isosceles triangle is 8 in. less than twice the base. The perimeter of the triangle is 74 in. What is the length of the base?