

Lesson 5 Problem-Solving Practice

Solving Equations with Variables on Each Side

1. One hot air balloon is 15 meters above the ground, and is rising at a rate of 20 meters per minute. A second balloon is 195 meters above the ground, and is descending at a rate of 16 meters per minute. In how many minutes will the two balloons be at the same height?

2. A commuter train pulling 8 cars had room for another 84 passengers. Halfway through the commute, the train had to be taken out of service. All of the passengers were transferred to another commuter train that had 6 cars with the same capacity as those in the first train. After all of the passengers transferred to the replacement train, there was room for only 10 more passengers. What is the maximum number of passengers that each car can transport?

3. The table below shows what two rental companies charge for an intermediate 4-door sedan. How many miles must a driver drive in one day to make both options the same price?

	First Choice Car	Best Rent-A-Car
Daily charge	\$65	\$48
Cost per mile	\$0.06	\$0.10

4. Cindy is saving for a trip to Hawaii. Each week, she puts aside the same amount of money for her airfare. After 9 weeks of saving, she needs \$390 more for her airfare. After 14 weeks, Cindy still needs \$240. How much is the airfare to Hawaii? How much does Cindy put aside each week for her airfare?

5. Josh has two leaking pipes in his basement. While waiting for the plumber to come, Josh puts a bucket under each leak. The two buckets each hold the same amount of water. The bucket under the first leak fills in 20 minutes. The bucket under the second leak fills in 35 minutes. Josh's brother takes away one of the buckets and places the one bucket under the two leaks. About how long will it take for the one bucket to fill completely?

6. Refer to the information in Exercise 5. Josh wraps a cloth around the first leak, which cuts the rate of that leak in half. At the same time, it doubles the rate of the second leak. How will this affect the time it takes to fill the bucket?