

## PROBLEMS

**Problem 1** An item was marked down 10%, and is now sold for \$90. What was the original price?

Solve this problem using a bar diagram, then using equivalent fractions without cross-multiplying, and one last time using algebra.

Finally, this problem can be solved using fraction division. Which interpretation of division does this problem use? Also, write down the division problem.

**Problem 2** (This problem is Example 2.4 on page 174 of P & B.) Sam has  $\frac{3}{7}$  as many stamps as Lisa. If Sam gives  $\frac{1}{6}$  of his stamps to Lisa, what will be the ratio of the number of Sam's stamps to Lisa's?

Solve this problem using a bar diagram, then using algebra. Can you set up the algebra without the bar diagram?

**Problem 3** (This problem is reworded from Example 3.3 on page 179 of P & B.) One week, a salesman sells a refrigerator for \$600, and he makes a 25% profit on this sale. The next week, he sells a different refrigerator for \$600, but this refrigerator is sold at a 25% loss. Find his net profit or loss in dollars, for these two sales.

Solve this problem using a bar diagram, then using the unitary method, then using equivalent fractions without cross-multiplying, and one last time using algebra.

**Problem 4** Two stores, Seth's Multimarket and Christelle's Megastore, sell the same item for \$100, but no one is buying it. In an effort to sell the item, Seth decides that he will mark down the item 10% of its original price every week until he sells it. With the same goal in mind, Christelle decides to mark the item down 10% of the previous price every week.

- a) How much will Seth and Christelle sell the item for after one week?
- b) What about after two weeks?
- c) After  $n$  weeks?
- d) At which store should you buy the item?