

---

 NAME \_\_\_\_\_

**Module 4** Solving Problems Using Linear Equations of One Variable  
**Lesson 4** Solving Mixture and Rate Problems Using Equations of One Variable



**additional  
practice**

**Solve.**

- |   |   |
|---|---|
| <p>1. To prepare for a bake sale, Lucy bought chocolate chips for \$1.40 per bag and butterscotch chips for \$1.75 per bag. She bought three times as many bags of chocolate chips as butterscotch chips, and spent a total of \$17.85. How many bags of each type of baking chip did Lucy buy?</p> <p><b>9 bags of chocolate chips; 3 bags of butterscotch chips</b></p> | <p>2. June has \$4.30 in nickels and quarters. The number of nickels is five less than twice the number of quarters. How many of each type of coin does June have?</p> <p><b>21 nickels; 13 quarters</b></p>  |
| <p>3. A postal clerk counted out \$8.85 worth of stamps. All the stamps were either \$0.37-stamps or \$0.55-stamps. How many \$0.37-stamps were there if the number of those stamps was three more than twice the number of \$0.55-stamps?</p> <p><b>15 \$0.37-stamps</b></p>   | <p>4. Cranberry-apple juice contains 60% apple juice. How much pure apple juice should be added to 3 qt of cranberry-apple juice to make a mixture that is 80% apple juice?</p> <p><b>3 qt</b></p>  |
| <p>5. A chemist has 15 mL of a 75% acid solution. How many mL of pure acid should be added so that the mixture is 80% acid?</p> <p><b>3.75 mL</b></p>   | <p>6. Two boats left an island harbor at the same time, traveling in opposite directions. A sailboat sailed at 25 mph, and a motorboat cruised at 40 mph. How long will it be before the boats are 182 miles apart?</p> <p><b>2.8 hours, or 2 hr 48 min</b></p>                 |
| <p>7. Two trains leave a station at 7 P.M., one heading due east and the other heading due west. At what time are the trains 100 miles apart if one travels at 70 mph and the other at 80 mph?</p> <p><b>7:40 P.M.</b></p>  | <p>8. Karl left home and drove at a constant rate of 80 km/h to see his grandmother. On his trip home, he drove at a constant rate of 100 km/h. What is the distance from his home to his grandmother's house if the total driving time was 5.4 hours?</p> <p><b>240 km</b></p> |

9. Two lifeboats are launched from a sinking ship at the same time, heading in opposite directions. The first lifeboat travels at 18 mph, and the second at 15 mph. How long will it be before the lifeboats are 16.5 miles apart?
10. On a trip from Dallas to St. Louis, a commuter plane takes off at 7:30 A.M. and travels at a constant rate of 250 mph. At 7:45 A.M., a jet begins the same route at a constant rate of 500 mph. At what time will the jet pass the commuter plane?

**0.5 hr or 30 min**

**8:00 A.M.**