Name _____ Date _____

Additional Exercises 5.4
Form I
Problem Solving Using Systems of Equations

Use the given conditions to write a system of equations. Then solve.

1. The sum of two numbers is 12. Four times the first number equals two times the second number. Find the two numbers. 1. _____

2. The sum of two numbers is 52. Their difference is 4. Find the two numbers. 2. _____

3. One number is four less than twice another number. Their sum is 20. Find the two numbers. 3. _____

4. The sum of two numbers is 156. The first number is six more than four times the second. Find the two numbers. 4. _____

5. The cost of two bath towels and three washcloths is $26. The cost of three bath towels and two washcloths is $29. Find the price of a single bath towel and the price of a single washcloth. 5. _____

6. Jayden bought four shirts and three pairs of pants for $200. His brother bought two shirts and two pair of pants for $116. How much did a pair of pants cost? How much did a shirt cost? 6. _____

Name _____ Date _____

7. On a buying trip in Los Angeles, Rosa Perez ordered 120 pieces of jewelry for her store. She bought bracelets costing $4 each and necklaces costing $11 each. Rosa wrote a check for $830 to pay for the order. How many bracelets and necklaces did Rosa purchase? 7. _____

8. The youth group at the church decided to plant geraniums and daisies around the church grounds as a group project. Geraniums in 6" pots cost $4 each and daisy plants cost $6 each. The youth group spent $410 on 80 plants. How many geraniums and how many daisy plants did the group buy? 8. _____

9. The perimeter of a rectangle is 36 inches. If the length is 4 inches longer than the width, find the dimensions of the rectangle. 9. _____

10. The perimeter of a rectangle is 968 cm. The width is one-third as long as the length. Find the dimensions of the rectangle. 10. _____

11. In a triangle, the sum of the measures of the angles is always 180^{o}. One angle of a triangle measures 40^{o}. Find the measures of the other two angles if the larger angle is five less than four times the smaller. 11. _____

12. Julie and Eric row their boat (at a constant speed) 40 miles downstream for 4 hours, helped by the current. Rowing at the same rate, the trip back against the current takes 10 hours. Find the rate of the current. 12. _____

Name _____ Date _____

Additional Exercises 5.4
Form II
Problem Solving Using Systems of Equations

Use the given conditions to write a system of equations. Then solve.

1. The sum of two numbers is –12. Their difference is 4. Find the two numbers. 1. _____

2. One number is 7 more than another. The sum of the two numbers is 41. Find the two numbers. 2. _____

3. The difference of two numbers is 20. The sum of three times the first and four times the second is 18. Find the two numbers. 3. _____

4. Devon purchased tickets to an air show for 9 adults and 2 children. The total cost was $192. The cost of a child's ticket was $3 less than the cost of an adult's ticket. Find the price of an adult's ticket and a child's ticket. 4. _____

5. Jackson always throws loose change into a pencil holder on his desk and takes it out every two weeks. This time it was all nickels and dimes. There are seven times as many dimes as nickels and he has $10.50. Find the number of dimes and nickels. 5. _____

6. The library had a used book sale to raise money to redecorate the children's area. Hardback books cost $3 each and paperback books cost $1.50 each. A total of 833 books were sold and the library raised $1822.50. How many hardback books and paperback books were sold? 6. _____

Name _____ Date _____

7. The three angles in a triangle always add up to 180º. In a triangle, one angle measures 32º and the second angle is 5 times larger than the third angle. Find the measures of the angles. 7. _____

8. The perimeter of a rectangle is 42 inches. The length of the rectangle is six more than twice the width. Find the dimensions of the rectangle. 8. _____

9. Jarod is having a problem with rabbits getting into his garden, so he will fence it in. The length of the garden is 12 feet more than four times the width. He needs 94 feet of fencing to do the job. Find the length and width of the garden. 9. _____

10. The morning and afternoon pre-school classes at Children's Fun Station went on a field trip to the zoo. While at the zoo, the children enjoyed snacks and drinks. For the morning classes, the teacher purchased 15 bags of popcorn and 16 juice boxes for a total cost of $42.50. In the afternoon, she spent $42 on 12 bags of popcorn and 18 juice boxes. Find the cost of a bag of popcorn and the cost of a juice box. 10. _____

11. A barge takes 3 hours to go (at a constant rate) downstream 27 miles with a current of 3 miles per hour. If the barge's engines are set at the same pace, find the time of the return trip against the current. 11. _____

12. Ellen and Kent are able to canoe down the river 18 miles in 3 hours, but on the return trip, they can only get 12 miles up-stream in 3 hours. Find the speed of the river's current. 12. _____

Name _____ Date _____

Additional Exercises 5.4
Form III
Problem Solving Using Systems of Equations

Use the given conditions to write a system of equations. Then solve.

1. The sum of two numbers is 92. The first number is four more than three times the second number. Find the two numbers. 1. _____

2. The sum of nine times the first number and five times a second number is 24. The second number is seventeen less than twice the first. Find the two numbers. 2. _____

3. The sum of twice one number and four times a second number is 78. If $\frac{1}{2}$ the second number is subtracted from the first number, the result is 9. Find the two numbers. 3. _____

4. The Johnson family spent the afternoon at the baseball game. Mr. Johnson purchased three hot dogs and three sodas on his first trip to the concession stand and spent $22.50. On his second trip to the concession stand, he spent $24.00 on five sodas and two hot dogs. How much does a hot dog cost? How much does a soda cost? 4. _____

5. Paul throws his loose change into a pencil holder on his desk and takes it out every two weeks. This time it was all quarters and nickels. There are four times as many quarters as nickels. He had a total of $13.65. Find the number of quarters and nickels. 5. _____

6. The Lone Star Volleyball tournament is held annually and teams from all over the United States participate in the tournament. Tickets for spectators are $5 for adults and $2 for children under 12. A total of 1800 tickets were sold and the revenue from the ticket sales was $7412. Find the number of adult tickets and children's tickets sold. 6. _____

Name _____ Date _____

7. The sum of the measures of the angles of any triangle is 180º. In a triangle, if one angle has a measure of 43º, find the measures of the other two angles if one of the angles is four less than twice the other angle. 7. _____

8. In an isosceles triangle, two of the angles are equal in measure. If the third angle is 21º less than three times the other angles, find the measures of all three angles. 8. _____

9. The perimeter of a rectangular swimming pool is 80 feet. The width is half the length increased by 3.7 feet. Find the dimensions of the pool. 9. _____

10. Ken and Hector live 25.2 miles apart in southeastern Missouri. They decide to bicycle toward each other and meet somewhere in between. Hector's rate of speed is 80% of Ken's. They start at the same time and meet two hours later. Find Hector's rate of speed and Ken's rate of speed. 10. _____

11. The Indian Guides are canoeing down the Lazy River. It takes them 2 hours to go 15 miles down the river with the current and 3 hours to get back up the river to their starting point. Find the speed of the canoe in still water and the speed of the current. 11. _____

12. Jane is going to rent a car while in Charlotte. The Crazy Car Company rents midsize cars for $17.50 per day plus $0.31 per mile driven. The Rent A Heap Company rents midsize cars for $21.00 per day plus $0.24 per mile. How many miles would Jane have to drive before the two plans were equal? What would be the cost? 12. _____