

Name \_\_\_\_\_

Date \_\_\_\_\_

**Additional Exercises 6.6**  
**Form I**  
Solving Quadratic Equations by Factoring

Solve each equation using the zero product principle.

1.  $(x - 9)(x + 7) = 0$  1. \_\_\_\_\_

2.  $(y + 12)(y + 8) = 0$  2. \_\_\_\_\_

3.  $(3x + 1)(2x - 1) = 0$  3. \_\_\_\_\_

4.  $x(x - 5) = 0$  4. \_\_\_\_\_

5.  $x(x + 3)(5x - 4) = 0$  5. \_\_\_\_\_

Use factoring to solve each quadratic equation.

6.  $x^2 - 5x + 4 = 0$  6. \_\_\_\_\_

7.  $3x^2 - 10x - 8 = 0$  7. \_\_\_\_\_

8.  $x^2 - x = 20$  8. \_\_\_\_\_

9.  $x^2 + 4x = 12$  9. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

10.  $6x^2 = 2 - x$

10. \_\_\_\_\_

11.  $y^2 = 49$

11. \_\_\_\_\_

12.  $3x^2 - 27x + 60 = 0$

12. \_\_\_\_\_

13.  $8x^2 - 28x = 120$

13. \_\_\_\_\_

14.  $2x(x - 5) = 12$

14. \_\_\_\_\_

15.  $18y^2 - 30y = 0$

15. \_\_\_\_\_

16.  $9x^2 = 12x - 4$

16. \_\_\_\_\_

Solve.

17. The width of a rectangle is 6 meters less than the length. The area of the rectangle is 40 square meters. Find the dimensions of the rectangle.

17. \_\_\_\_\_

18. An object is thrown upward from the top of a 160 foot building with an initial velocity of 48 feet per second. The height  $h$  of the object after  $t$  seconds is given by the quadratic equation  $h = -16t^2 + 48t + 160$ . How long will it take for the object to hit the ground?

18. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

**Additional Exercises 6.6**  
**Form II**  
Solving Quadratic Equations by Factoring

Solve each equation using the zero product principle.

1.  $(x - 7)(x - 10) = 0$

1. \_\_\_\_\_

2.  $(y + 4)(y + 12) = 0$

2. \_\_\_\_\_

3.  $(5x - 4)(x + 9) = 0$

3. \_\_\_\_\_

4.  $x(x + 6)(x - 7) = 0$

4. \_\_\_\_\_

5.  $4x(x + 3)(4x - 7) = 0$

5. \_\_\_\_\_

Use factoring to solve each quadratic equation.

6.  $y^2 - 9y + 8 = 0$

6. \_\_\_\_\_

7.  $4x^2 + 13x - 12 = 0$

7. \_\_\_\_\_

8.  $5x^2 - 23x = 10$

8. \_\_\_\_\_

9.  $4x^2 - 25 = 0$

9. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

10.  $3x^2 - 20x = 7$

10. \_\_\_\_\_

11.  $2x(4x + 13) = 7$

11. \_\_\_\_\_

12.  $3x^2 = 14x + 80$

12. \_\_\_\_\_

13.  $25y^2 + 25y + 6 = 0$

13. \_\_\_\_\_

14.  $24x^2 + 42x = 0$

14. \_\_\_\_\_

15.  $x^3 + 15x = 8x^2$

15. \_\_\_\_\_

16.  $4x(x^2 + 2) = 9x^2$

16. \_\_\_\_\_

Solve.

17. The length of a rectangle is 8 inches less than twice the width. If the area of the rectangle is 90 square inches, what are the dimensions of the rectangle?

17. \_\_\_\_\_

18. A window washer accidentally drops a bucket from the top of a 64 foot building. The height  $h$  of the bucket after  $t$  seconds is given by the quadratic equation  $h = -16t^2 + 64$ . When will the bucket hit the ground?

18. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

**Additional Exercises 6.6**  
**Form III**  
Solving Quadratic Equations by Factoring

Solve each equation using the zero product principle.

1.  $(7x + 4)(x - 2) = 0$  1. \_\_\_\_\_

2.  $(x - 8)(3x - 10) = 0$  2. \_\_\_\_\_

3.  $x(3x + 15) = 0$  3. \_\_\_\_\_

4.  $y(y + 17) = 0$  4. \_\_\_\_\_

5.  $x(5x - 1)(x - 8) = 0$  5. \_\_\_\_\_

Use factoring to solve each quadratic equation.

6.  $5x^2 - 4x - 9 = 0$  6. \_\_\_\_\_

7.  $x^2 - 24x = 25$  7. \_\_\_\_\_

8.  $13y^2 - 6y = 0$  8. \_\_\_\_\_

9.  $16x^2 = 25$  9. \_\_\_\_\_

Name \_\_\_\_\_

Date \_\_\_\_\_

10.  $4x^2 = 20x - 25$  10. \_\_\_\_\_

11.  $16x^3 + 28x^2 = 30x$  11. \_\_\_\_\_

12.  $x(3x - 5) = 28$  12. \_\_\_\_\_

13.  $x(5x + 8) = 4$  13. \_\_\_\_\_

14.  $3x^3 - 75x = 0$  14. \_\_\_\_\_

15.  $y(2y + 5) = 2(36 - y)$  15. \_\_\_\_\_

16.  $5x(x - 5) = 3(x + 4)$  16. \_\_\_\_\_

Solve.

17. The length of a rectangle is 6 feet less than twice the width. If the area of the rectangle is 216 square feet, find the dimensions of the rectangle. 17. \_\_\_\_\_

18. If the sides of a square are increased by 2 meters, the area becomes 64 square meters. Find the length of a side of the original square. 18. \_\_\_\_\_

19. A window washer accidentally drops a bucket from the top of a 100 foot tall building. The height  $h$  of the bucket after  $t$  seconds is given by  $h = -16t^2 + 100$ . How long will it be before the bucket hits the ground? 19. \_\_\_\_\_20. Each cycle of a screen saver program generates and then erases numbers of little animated figures called *froobies*. The formula  $P = -2x^2 + 106x - 674$  models the population,  $P$ , of *froobies* after  $x$  minutes within a cycle. How many minutes into a cycle will the *froobie* population first reach 118? 20. \_\_\_\_\_