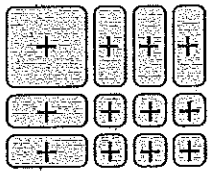
LESSON 10.5

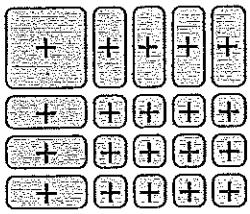
NAME _____ DATE _____

Practice A

For use with pages 604–609

Use the model to write the factors of the trinomial.

1. 

2. 

Match the trinomial with a correct factorization.

3. $x^2 - 5x + 6$
4. $x^2 + 5x + 6$
5. $x^2 - x - 6$
6. $x^2 + x - 6$

A. $(x + 3)(x + 2)$
B. $(x - 3)(x + 2)$
C. $(x + 3)(x - 2)$
D. $(x - 3)(x - 2)$

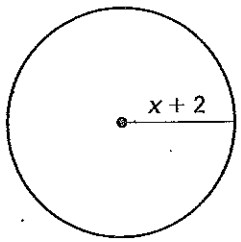
Factor the trinomial.

7. $x^2 + 6x + 8$
8. $x^2 + 3x - 4$
9. $x^2 + 3x + 2$
10. $x^2 - 2x - 8$
11. $x^2 + 7x + 12$
12. $x^2 - 6x + 5$
13. $x^2 + x - 20$
14. $x^2 + 8x + 16$
15. $x^2 - 10x + 24$

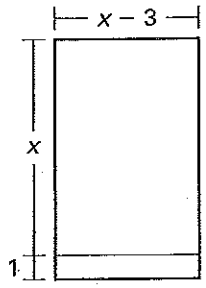
Solve the equation by factoring.

16. $x^2 + 3x - 4 = 0$
17. $x^2 - 5x + 6 = 0$
18. $x^2 + 3x - 18 = 0$
19. $x^2 - 16x - 36 = 0$
20. $x^2 + 8x + 7 = 0$
21. $x^2 + 3x - 10 = 0$
22. $x^2 + 5x = 14$
23. $x^2 - 7x = 8$
24. $x^2 - 9x + 20 = 0$
25. $x^2 - 2x - 48 = 0$
26. $x^2 + 12x = -27$
27. $x^2 + 3x = 28$

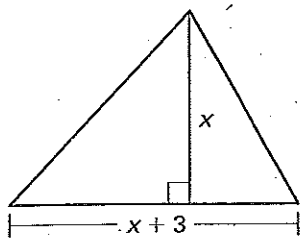
Find the dimensions of the geometric shape.

28. 

Area $= 144\pi$ cm^2

29. 

Area $= 60$ in.^{2}

30. 

Area $= 27$ in.^{2}

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Practice B

For use with pages 604–609

Match the trinomial with a correct factorization.

1. $x^2 - 5x + 6$
2. $x^2 + 5x + 6$
3. $x^2 - x - 6$
4. $x^2 + x - 6$
5. $x^2 - 4x + 4$
6. $x^2 - 6x + 9$

A. $(x - 2)(x - 2)$
B. $(x - 3)(x + 2)$
C. $(x - 3)(x - 3)$
D. $(x - 3)(x - 2)$
E. $(x + 3)(x + 2)$
F. $(x + 3)(x - 2)$

Factor the trinomial.

7. $x^2 - 5x - 14$
8. $x^2 - 8x + 15$
9. $x^2 + 8x + 15$
10. $x^2 - 5x + 4$
11. $x^2 - x - 42$
12. $x^2 + 6x - 16$
13. $x^2 - 16x + 64$
14. $x^2 + 13x + 36$
15. $x^2 - 15x + 36$

Solve the equation by factoring.

16. $x^2 + 3x - 40 = 0$
17. $x^2 - 16x + 63 = 0$
18. $x^2 - 11x + 28 = 0$
19. $x^2 - 6x - 7 = 0$
20. $x^2 - 6x + 9 = 0$
21. $x^2 + 8x + 15 = 0$
22. $x^2 + x = 6$
23. $x^2 + 11x = 12$
24. $x^2 - 3x = 28$
25. $x^2 - 7 = -6x$
26. $x^2 - 8 = -7x$
27. $x^2 - 4x - 8 = 4$

Tell whether the quadratic expression can be factored with integer coefficients. If it can, find the factors.

28. $x^2 + 17x + 60$
29. $x^2 - 15x + 48$
30. $x^2 - 5x - 36$
31. $x^2 + 13x + 30$
32. $x^2 + 11x + 30$
33. $x^2 + 8x - 40$

Area of a Circle **In Exercises 34 and 35, use the following information.**

The area of a circle is given by $A = \pi(x^2 - 20x + 100)$.

34. Use factoring to find an expression for the radius of the circle.
35. If the area of the circle is 16π square feet, what is the value of x?

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Practice C

For use with pages 604–609

Factor the trinomial.

1. $x^2 + 5x + 6$
2. $x^2 + 6x + 8$
3. $x^2 - 4x + 3$
4. $x^2 - 11x + 30$
5. $x^2 - 2x - 8$
6. $x^2 - x - 12$
7. $x^2 + 3x - 28$
8. $x^2 + 5x - 14$
9. $x^2 + 8x + 15$
10. $x^2 - 20x + 100$
11. $x^2 + 17x + 72$
12. $x^2 - 12x - 64$

Solve the equation by factoring.

13. $x^2 - 13x + 36 = 0$
14. $x^2 - 3x - 70 = 0$
15. $x^2 + 4x - 45 = 0$
16. $x^2 + 11x + 28 = 0$
17. $x^2 - 15x + 44 = 0$
18. $x^2 + 3x = 18$
19. $x^2 - 2x = 63$
20. $x^2 - 14 = 5x$
21. $x^2 + 10 = 11x$
22. $x^2 - x = 12$
23. $x^2 - 4x = -3$
24. $x^2 - 14 = -5x$
25. $x^2 - x = 3x + 12$
26. $x^2 + 6x + 10 = 2$
27. $x^2 + 2x - 40 = 40$

Use the discriminant to tell whether the quadratic expression can be factored with integer coefficients. If it can, find the factors.

28. $x^2 - 12x + 32$
29. $x^2 - 13x - 48$
30. $x^2 - x - 90$
31. $x^2 - 5x - 84$
32. $x^2 - 17x + 66$
33. $x^2 + 10x - 44$

Write a quadratic equation that has the given solutions.

34. 12 and 5
35. -18 and 20
36. 25 and 0

Area of a Rectangle **In Exercises 37–39, use the following information.**

The area of a rectangle is given by $A = x^2 + 18x + 72$.

37. Use factoring to find an expression for the dimensions of the rectangle.
38. If the area of the rectangle is 7 square feet, what are the possible values of x?
39. What are the dimensions of the rectangle?