LESSON 2.6

Exercise Set A

MM1A2f Factor expressions by greatest common factor, grouping, trial and error, and special products.

MM1A3a Solve quadratic equations in the form $ax^2 + bx + c = 0$, where $a = 1$, by using factorization and finding square roots where applicable.

MM1A3c Use a variety of techniques, including technology, tables, and graphs to solve equations resulting from the investigation of $x^2 + bx + c = 0$.

Factor the trinomial.

1. $x^2 + 8x + 7$

2. $b^2 - 7b + 10$

3. $w^2 - 12w - 13$

4. $p^2 + 10p + 25$

5. $m^2 - 10m + 24$

6. $y^2 - 5y - 24$

7. $a^2 + 13a + 36$

8. $n^2 + 2n - 48$

9. $z^2 - 14z + 40$

Solve the equation.

10. $y^2 + 17y + 72 = 0$

11. $a^2 - 9a - 36 = 0$

12. $w^2 - 13w + 42 = 0$

13. $m^2 - 5m - 14 = 0$

14. $x^2 + 11x + 24 = 0$

15. $n^2 - 12n + 27 = 0$

16. $d^2 + 5d - 50 = 0$

17. $p^2 + 16p + 48 = 0$

18. $z^2 - z - 30 = 0$

Find the zeros of the polynomial function.

19. $f(x) = x^2 - 5x - 36$

20. $g(x) = x^2 + 8x - 20$

21. $h(x) = x^2 - 11x + 24$

22. $f(x) = x^2 + 11x + 28$

23. $g(x) = x^2 + 11x - 12$

24. $h(x) = x^2 + 3x - 18$

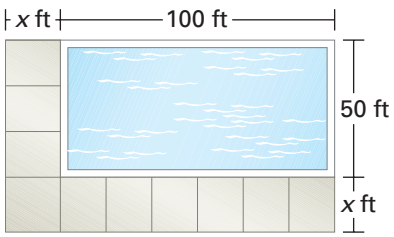
Solve the equation.

25. $x(x + 17) = -60$

26. $s^2 - 3(s + 2) = 4$

27. $w(w + 8) = -15$

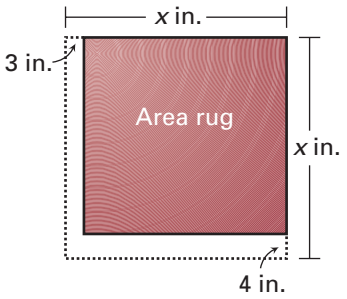
28. Patio Area A community center is building a patio area along two sides of its pool. The pool is rectangular with a width of 50 feet and a length of 100 feet. The patio area will have the same width on each side of the pool.



a. Write a polynomial that represents the combined area of the pool and the patio area.

b. The combined area of the pool and patio area should be 8400 square feet. How wide should the patio area be?

29. Area Rug You create your own area rug from a square piece of remnant carpeting. You cut 4 inches from the length and 3 inches from the width. The area of the resulting area rug is 1056 square inches.



a. Write a polynomial that represents the area of your area rug.

b. What was the perimeter of the original piece of remnant carpeting?

UNIT 2

LESSON 2.6

Exercise Set B

MM1A2f Factor expressions by greatest common factor, grouping, trial and error, and special products.

MM1A3a Solve quadratic equations in the form $ax^2 + bx + c = 0$, where $a = 1$, by using factorization and finding square roots where applicable.

MM1A3c Use a variety of techniques, including technology, tables, and graphs to solve equations resulting from the investigation of $x^2 + bx + c = 0$.

Factor the trinomial.

1. $x^2 - x - 56$
2. $m^2 + 14m + 48$
3. $y^2 - 15y + 54$
4. $p^2 + 12p + 20$
5. $w^2 - 14w + 45$
6. $x^2 + 2x - 24$

Solve the equation.

7. $n^2 - 11n - 60 = 0$
8. $z^2 + 22z + 121 = 0$
9. $c^2 - 24c + 144 = 0$
10. $x^2 + 5x - 500 = 0$
11. $b^2 + b - 132 = 0$
12. $m^2 + 17m + 72 = 0$
13. $r^2 - 4r - 60 = 0$
14. $p^2 - 6p - 72 = 0$
15. $y^2 - 16y + 64 = 0$

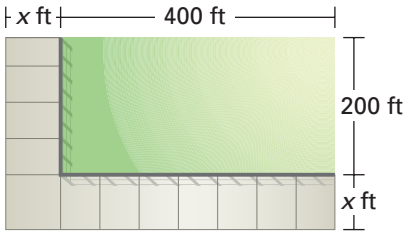
Find the zeros of the polynomial function.

16. $f(x) = x^2 + 30x + 225$
17. $h(x) = x^2 - 5x - 150$
18. $g(x) = x^2 - 13x + 30$
19. $g(x) = x^2 - 10x - 600$
20. $f(x) = x^2 + 16x + 28$
21. $f(x) = x^2 + 13x + 40$

Solve the equation.

22. $x^2 + 2\left(\frac{1}{2}x - 10\right) = 0$
23. $x^2 - 10(x + 2) = 4$
24. $c(c - 11) = -18$

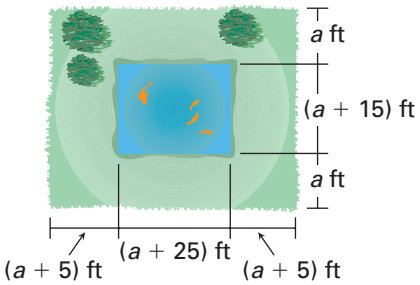
25. **Zoo Exhibit** A zoo is building a walkway along two sides of an exhibit. The exhibit is rectangular with a width of 400 feet and a length of 200 feet. The walkway will have the same width on each side of the exhibit.



   a. Write a polynomial that represents the combined area of the exhibit and the walkway.

   b. The combined area of the exhibit and walkway should be 95,625 square feet. How wide should the walkway be?

26. **Fish Pond** A rectangular fish pond is positioned in the center of a rectangular grassy area, as shown. The area of the pond is 2000 square feet.



   a. Use the dimensions given in the diagram to find the dimensions of the pond.

   b. The combined area of the pond and the surrounding grassy area is 9900 square feet. Find the length and width of the grassy area.

UNIT 2