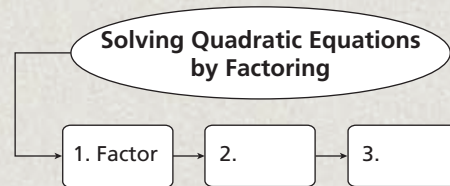


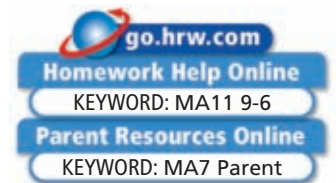
THINK AND DISCUSS

1. Explain two ways to solve $x^2 + x - 6 = 0$. How are these two methods similar?
2. Describe the relationships among the solutions of $x^2 - 4x - 12 = 0$, the zeros and x -intercepts of $y = x^2 - 4x - 12$, and the factors of $x^2 - 4x - 12$.
3. **GET ORGANIZED** Copy and complete the graphic organizer. In each box, write a step used to solve a quadratic equation by factoring.



9-6

Exercises



GUIDED PRACTICE

SEE EXAMPLE 1 Use the Zero Product Property to solve each equation. Check your answer.

p. 650

1. $(x + 2)(x - 8) = 0$
2. $(x - 6)(x - 5) = 0$
3. $(x + 7)(x + 9) = 0$
4. $(x)(x - 1) = 0$
5. $(x)(x + 11) = 0$
6. $(3x + 2)(4x - 1) = 0$

SEE EXAMPLE 2 Solve each quadratic equation by factoring. Check your answer.

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7. $x^2 + 4x - 12 = 0$
8. $x^2 - 8x - 9 = 0$
9. $x^2 - 5x + 6 = 0$
10. $x^2 - 3x = 10$
11. $x^2 + 10x = -16$
12. $x^2 + 2x = 15$
13. $x^2 - 8x + 16 = 0$
14. $-3x^2 = 18x + 27$
15. $x^2 + 36 = 12x$
16. $2x^2 + 5x - 3 = 0$
17. $2x^2 + 7x + 6 = 0$
18. $2x^2 + 6x = -18$

SEE EXAMPLE 3 19. **Games** A group of friends tries to keep a beanbag from touching the ground.

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On one kick, the beanbag's height can be modeled by $h = -16t^2 + 14t + 2$, where h is the height in feet above the ground and t is the time in seconds. Find the time it takes the beanbag to reach the ground.

PRACTICE AND PROBLEM SOLVING

Independent Practice

For Exercises	See Example
20–25	1
26–31	2
32	3

Use the Zero Product Property to solve each equation. Check your answer.

20. $(x - 8)(x + 6) = 0$
21. $(x + 4)(x + 7) = 0$
22. $(x - 2)(x - 5) = 0$
23. $(x - 9)(x) = 0$
24. $(x)(x + 25) = 0$
25. $(2x + 1)(3x - 1) = 0$

Solve each quadratic equation by factoring. Check your answer.

26. $x^2 + 8x + 15 = 0$
27. $x^2 - 2x - 8 = 0$
28. $x^2 - 4x + 3 = 0$
29. $3x^2 - 2x - 1 = 0$
30. $4x^2 - 9x + 2 = 0$
31. $-x^2 = 4x + 4$

Extra Practice

Skills Practice p. S21
Application Practice p. S36