

9-6
EXERCISES

Chapter 9
Quadratic Functions and Equations

Homework Help Online

Online Support for Lesson 9-6 Homework

GUIDED PRACTICE

Click a video icon to see a Lesson Tutorial Video. Click a pencil icon to practice similar problems.



VIDEO

See Example 1

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

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. $(3x + 2)(4x - 1) = 0$



PRACTICE



VIDEO

See Example 2

Solve each quadratic equation by factoring. Check your answer.

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. $x^2 + 2x = 15$



PRACTICE

13. $x^2 - 8x + 16 = 0$

14. $-3x^2 = 18x + 27$

15. $x^2 + 36 = 12x$

16. $x^2 + 14x + 49 = 0$

17. $x^2 - 16x + 64 = 0$

18. $2x^2 + 6x = -18$



VIDEO



PRACTICE

See Example 3

19. **Games** A group of friends tries to keep a beanbag from touching the ground without using their hands. Once the beanbag has been kicked, its 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

Click a video icon to see a Lesson Tutorial Video. Click a lightbulb icon to see a complete solution.



VIDEO

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



VIDEO

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. $x^2 + 10x + 25 = 0$

30. $x^2 - x = 12$

31. $-x^2 = 4x + 4$



VIDEO

32. **Multi-Step** The height of a flare can be approximated by the function $h = -16t^2 + 95t + 6$, where h is the height in feet and t is the time in seconds. Find the time it takes the flare to hit the ground.



SOLUTION

Determine the number of solutions of each equation.

33. $(x + 8)(x + 8) = 0$



SOLUTION

35. $(x + 7)^2 = 0$



37. $x^2 + 12x + 40 = 4$



41. **Geometry** The photo shows a traditional thatched house as found in Santana, Madeira in Portugal. The front of the house is in the shape of a triangle. Suppose the base of the triangle is 1 m less than its height and the area of the triangle is 15 m^2 . Find the height of the triangle. (*Hint: Use $A = \frac{1}{2}bh$.*)



43. **Physics** The height of a fireworks rocket in meters can be approximated by $h = -5t^2 + 30t$, where h is the height in meters and t is time in seconds. Find the time it takes the rocket to reach the ground after it has been launched.