

**9-7**  
EXERCISES

**Chapter 9**  
Quadratic Functions and Equations

Homework Help Online

Online Support for Lesson 9-7 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**

Solve using square roots. Check your answer.

1.  $x^2 = 225$

2.  $x^2 = 49$

3.  $x^2 = -100$

4.  $x^2 = 400$

5.  $-25 = x^2$

6.  $36 = x^2$



PRACTICE



VIDEO

**See Example 2**

7.  $3x^2 - 75 = 0$

8.  $0 = 81x^2 - 25$

9.  $49x^2 + 64 = 0$

10.  $16x^2 + 10 = 131$

11.  $0 = 4x^2 - 16$

12.  $100x^2 + 26 = 10$



PRACTICE



VIDEO

**See Example 3**

Solve. Round to the nearest hundredth.

13.  $3x^2 = 81$

14.  $0 = x^2 - 60$

15.  $100 - 5x^2 = 0$



PRACTICE



VIDEO

**See Example 3**

Solve. Round to the nearest hundredth.

13.  $3x^2 = 81$

14.  $0 = x^2 - 60$

15.  $100 - 5x^2 = 0$



PRACTICE



VIDEO

**See Example 4**

16. **Geometry** The length of a rectangle is 3 times its width. The area of the rectangle is 170 square meters. Find the width. Round to the nearest tenth of a meter. (*Hint: Use  $A = bh$ .*)



PRACTICE

**PRACTICE AND PROBLEM SOLVING**

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

**VIDEO**

Solve using square roots. Check your answer.

17.  $x^2 = 169$

18.  $x^2 = 25$

19.  $x^2 = -36$

20.  $x^2 = 10,000$

21.  $-121 = x^2$

22.  $625 = x^2$

**VIDEO**

23.  $4 - 81x^2 = 0$

24.  $-4x^2 - 49 = 0$

25.  $64x^2 - 5 = 20$

26.  $9x^2 + 9 = 25$

27.  $49x^2 + 1 = 170$

28.  $81x^2 + 17 = 81$

**VIDEO**

Solve. Round to the nearest hundredth.

29.  $4x^2 = 88$

30.  $x^2 - 29 = 0$

31.  $x^2 + 40 = 144$

32.  $3x^2 - 84 = 0$

33.  $50 - x^2 = 0$

34.  $2x^2 - 10 = 64$



VIDEO

35. **Entertainment** For a scene in a movie, a sack of money is dropped from the roof of a 600 ft skyscraper. The height of the sack above the ground is given by  $h = -16t^2 + 600$ , where  $t$  is the time in seconds. How long will it take the sack to reach the ground? Round to the nearest tenth of a second.



SOLUTION

37. **Number Theory** If  $a = 2b$  and  $2ab = 36$ , find all possible solutions for  $a$  and  $b$ .
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SOLUTION

Determine whether each statement is always, sometimes, or never true.

43. If  $n$  is a rational number, then the solutions to  $x^2 = n$  are rational numbers.



45. **Critical Thinking** For the equation  $x^2 = a$ , describe the values of  $a$  that will result in each of the following.

a. two solutions

b. one solution

c. no solution



For the quadratic equation  $x^2 + a = 0$ , determine whether each value of  $a$  will result in two rational solutions. Explain.

47.  $-\frac{1}{2}$



49.  $-\frac{1}{4}$