Practice 3.1.1: Taking the Square Root of Both Sides A

Solve each equation for x.

1. $x^2 = 81$

2. $x^2 = -25$

3. $x^2 - 5 = 4$

4. $(x + 3)^2 = 1$

5. $(x + 3)^2 + 7 = -2$

6. $4(x - 10)^2 = 25$

Use what you know about square roots to complete problems 7–10. Round to the nearest hundredth, if necessary.

7. When does a quadratic equation in the form $ax^2 + b = c$ have two real, rational solutions?

8. The area of a square with sides of length s is given by s^2. The area of a square is 40 square centimeters. What is the length of one side of the square, rounded to the nearest hundredth?

9. The area of a circle with radius r is given by πr^2. The area of a circle is 60 square millimeters. What is the radius of the circle, rounded to the nearest hundredth?

10. The surface area of a cube with edges of length a is given by $6a^2$. If the surface area of a cube is 200 square inches, what is the length of each edge of the cube, rounded to the nearest hundredth?