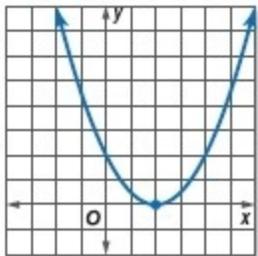


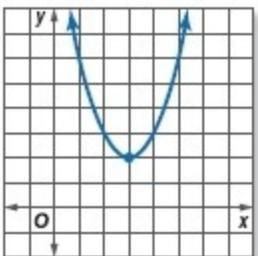
## 4-2 Solving Quadratic Equations by Graphing

Use the related graph of each equation to determine its solutions.

16.  $0.5x^2 - 2x + 2 = 0$



18.  $x^2 - 6x + 11 = 0$



Solve each equation. If exact roots cannot be found, state the consecutive integers between which the roots are located.

20.  $x^2 = 5x$

22.  $x^2 - 5x - 14 = 0$

24.  $x^2 - 18x = -81$

**NUMBER THEORY** Use a quadratic equation to find two real numbers that satisfy each situation, or show that no such numbers exist.

37. Their sum is  $-8$  and their product is  $-209$ .

**CCSS MODELING** For Exercises 38–40, use the formula  $h(t) = v_0t - 16t^2$ , where  $h(t)$  is the height of an object in feet,  $v_0$  is the object's initial velocity in feet per second, and  $t$  is the time in seconds.

38. **BASEBALL** A baseball is hit directly upward with an initial velocity of 80 feet per second. Ignoring the height of the baseball player, how long does it take for the ball to hit the ground?

39. **CANNONS** A cannonball is shot directly upward with an initial velocity of 55 feet per second. Ignoring the height of the cannon, how long does it take for the cannonball to hit the ground?

40. **GOLF** A golf ball is hit directly upward with an initial velocity of 100 feet per second. How long will it take for it to hit the ground?