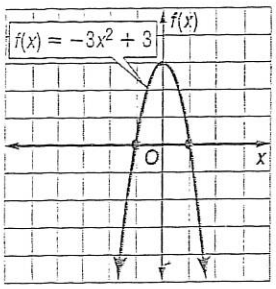
SECONDARY MATH III
CHAPTER 5
WS 5.2 SOLVING QUADRATICS

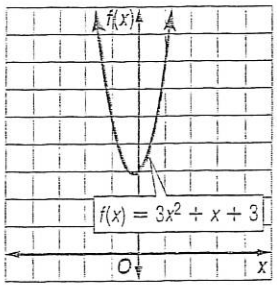
NAME_____
DATE_____
CLASS_____

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

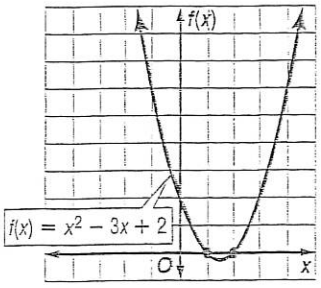
1. $-3x^2 + 3 = 0$



2. $3x^2 + x + 3 = 0$

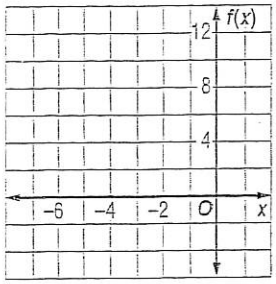


3. $x^2 - 3x + 2 = 0$

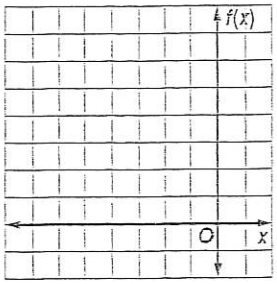


Solve each equation by graphing. If exact roots cannot be found, state the consecutive integers between which the roots are located.

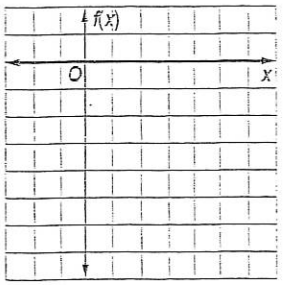
4. $-2x^2 - 6x + 5 = 0$



5. $x^2 + 10x + 24 = 0$

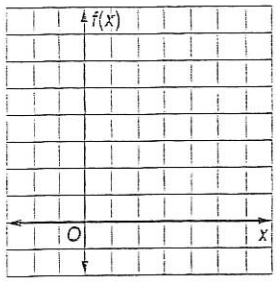


6. $2x^2 - x - 6 = 0$

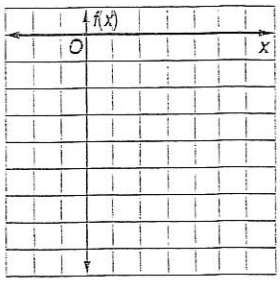


Use a quadratic equation to find two real numbers that satisfy each situation, or show that no such numbers exist.

7. Their sum is 1, and their product is −6.



8. Their sum is 5, and their product is 8.

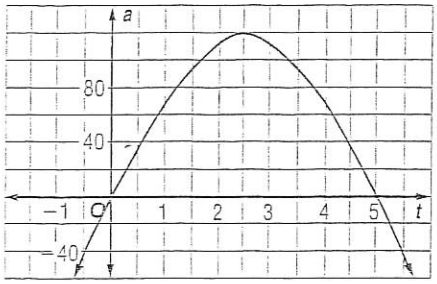


For Exercises 9 and 10, use the formula $h(t) = v_0t - 16t^2$, where $h(t)$ is the height of an object in feet, v_0 is the object's initial velocity in feet per second, and t is the time in seconds.

9. BASEBALL Marta throws a baseball with an initial upward velocity of 60 feet per second. Ignoring Marta's height, how long after she releases the ball will it hit the ground?

10. VOLCANOES A volcanic eruption blasts a boulder upward with an initial velocity of 240 feet per second. How long will it take the boulder to hit the ground if it lands at the same elevation from which it was ejected?

TRAJECTORIES David threw a baseball into the air. The function of the height of the baseball in feet is $h = 80t - 16t^2$, where t represents the time in seconds after the ball was thrown. Use this graph of the function to determine how long it took for the ball to fall back to the ground.



BRIDGES The main support for a bridge is a large parabolic arch. The height of the arch above the ground is given by the function $h = 32 - \frac{1}{50}x^2$, where h is the height in meters and x is the distance in meters from the center of the bridge. Graph this equation and describe where the arch touches the ground.