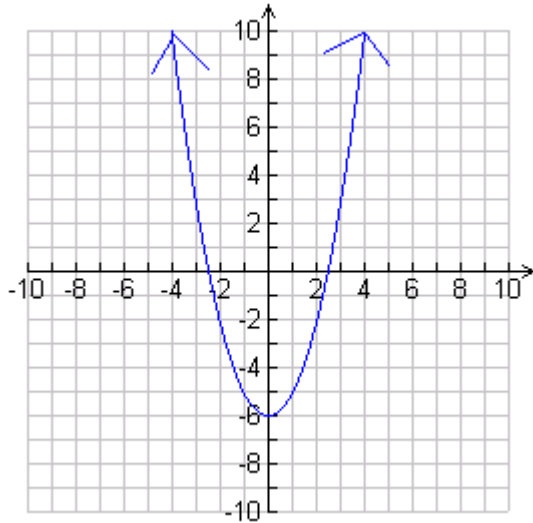


Module 8 Confirmation Test Review

1. For the following graph, identify:



- the vertex
- the x-intercepts
- the y-intercept
- the domain
- the range
- Find $f(-1)$ and $f(1)$

2. Graph the given quadratic functions by plotting the following:

- the vertex - Is it a maximum or a minimum point?
- the x-intercepts
- the y-intercept
- two other pairs of symmetrical points
- State the domain
- State the range

$$f(x) = -2x^2 + 9x + 5$$

X	Y

3. Solve the following quadratic equation.

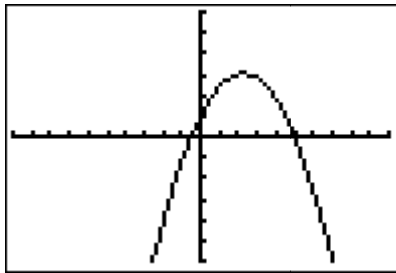
$$6x^2 + 13x - 5 = 0$$

4. Solve the following quadratic equation by using the quadratic formula. Give the exact answer and the approximate answer rounded to the nearest hundredth.

$$3x^2 - 7x - 5 = 0$$

5. Marian is planning to walk to the library to meet her friends and doesn't know how far the walk will be. Suppose you have represented both her house and the library as two points on a rectangular coordinate system and that she is able to walk the straight line that is formed by the two points. The coordinates of her house are (5,3) and the coordinates of the library are (-4,2). What is the distance in miles from her house to the library?
6. Jacob is an avid skateboarder and has built a ramp to use when he skates at home on his own street. The length of the base of the ramp is 5 feet and the ramp itself is 8 feet. Find the height of the ramp rounded to the nearest hundredth.
7. A certain manufacturer of toy cars has determined that the profit function that models their profit for a year is $P(x) = -2x^2 + 44x + 24$ where x represents the number of cars produced and sold in thousands and $P(x)$ represents the profit obtained in hundred thousands of dollars. What is the maximum profit the company can achieve and how many items are produced and sold when they achieve it? How many items will be produced and sold when the company assumes no profit?
8. A parachutist jumps from a plane flying at an altitude of 18,000 feet. He will not release his parachute until he reaches 3,000 feet. Using the vertical position equation, $S = -16t^2 + v_0t + s_0$, determine how long he will free fall before releasing his parachute?

1. a) (0, -6)
 - b) (-2.5, 0) and (2.5, 0)
 - c) (0, -6)
 - d) all real numbers
 - e) $y \leq -6$
 - f) $f(-1) = -5$ and $f(1) = -5$
2. a) (2.25, 15.125), maximum
 - b) (-0.5, 0) and (5, 0)
 - c) (0, 5)
 - d)



- e) all real numbers
 - f) $y \leq 15.125$
3. $x = \frac{1}{8}$ or $x = -\frac{5}{2}$
 4. $x = \frac{7 \pm \sqrt{109}}{6}$ or $x = 2.91, -0.57$
 5. 9.06 miles
 6. 6.24 feet
 7. The company will achieve a maximum profit of \$26,600,000 when 11,000 toy cars are produced and sold. The company will have 0 profit when 22,533 items are produced and sold.

8. 30.62 seconds