Chapter 7: Quadratics

Lesson 7.3 Writing an Equation

Example #1: Write the equation for the following parabola

Example #2: A parabola has a y-intercept of -4 and a vertex at (3,-7). Write the equation for this quadratic

Example #3: A parabola has x-intercepts of -3 and 5 and goes through the point (2,15). Write the equation for this quadratic
Assignment: Write the equation for each of the following parabola graphs

1)

2)

3)
7) A parabola has a vertex at (2,1) and goes through the origin

8) A parabola has a vertex at (-2,-5) and a y-intercept of 3

9) A parabola has a vertex at (-1,6) and an x-intercept of -4

10) A parabola has a vertex at (-4,0) and goes through the point (-2,12)

11) A parabola has an axis of symmetry at \( x=1 \), a y-intercept of 2, and only one x-intercept
Answer Key

1) \[ y = -(x - 2)^2 \]
2) \[ y = 2(x - 1)^2 - 2 \]
3) \[ y = 3(x - 1)^2 - 4 \]
4) \[ y = -\frac{3}{2}x^2 + 6 \]
5) \[ y = \frac{1}{2}(x + 2)^2 + 1 \]
6) \[ y = 2(x - 2)^2 - 2 \]
7) \[ y = -\frac{1}{4}(x - 2)^2 + 1 \]
8) \[ y = 2(x + 2)^2 - 5 \]
9) \[ y = -\frac{2}{3}(x + 1)^2 + 6 \]
10) \[ y = 3(x + 4)^2 \]
11) \[ y = 2(x - 1)^2 \]