UNIT 5 • POLYNOMIAL OPERATIONS AND QUADRATIC FUNCTIONS   A–SSE.3★, A–CED.2★
Lesson 5.8: Creating and Graphing Equations Using the *x*-intercepts

Practice 5.8: Creating and Graphing Equations Using the *x*-intercepts   A

Identify the *x*-intercepts, if any, of the following quadratic functions. Determine the equation of the axis of symmetry for each parabola.

1. $y = (x - 3)(x + 6)$

2. $f(x) = \left(x - \dfrac{2}{3}\right)\left(x + \dfrac{2}{3}\right)$

Determine the equation of each quadratic function in standard form, given the zeros and a point on the graph.

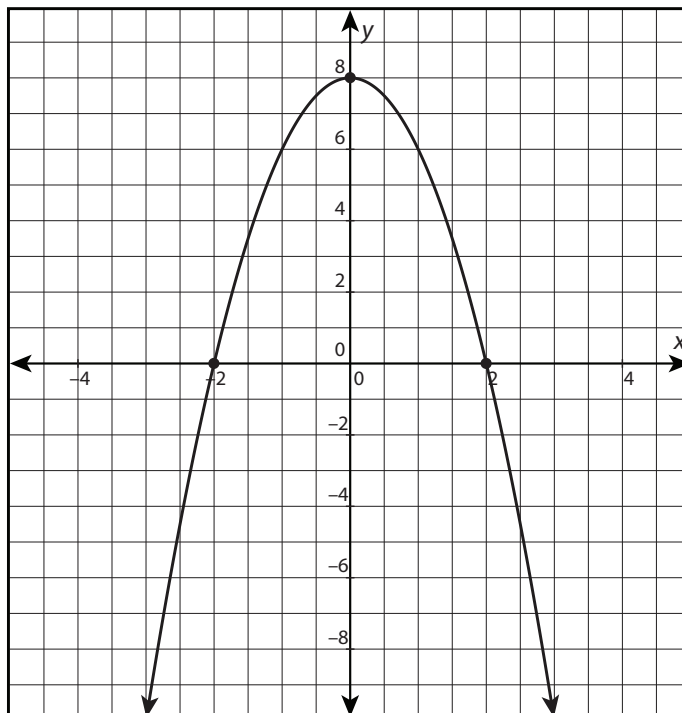3. $x = -2$; (3, 10)

4. $x = 5$, $x = -12$; (0, –60)

Sketch a graph for each of the following quadratic functions.

5. $y = (x + 3)(x + 1)$

6. $y = (3x - 2)(x - 1)$

Given the graph of a quadratic function, use the intercepts and another point on the graph to write the equation of the function in standard form.

7.

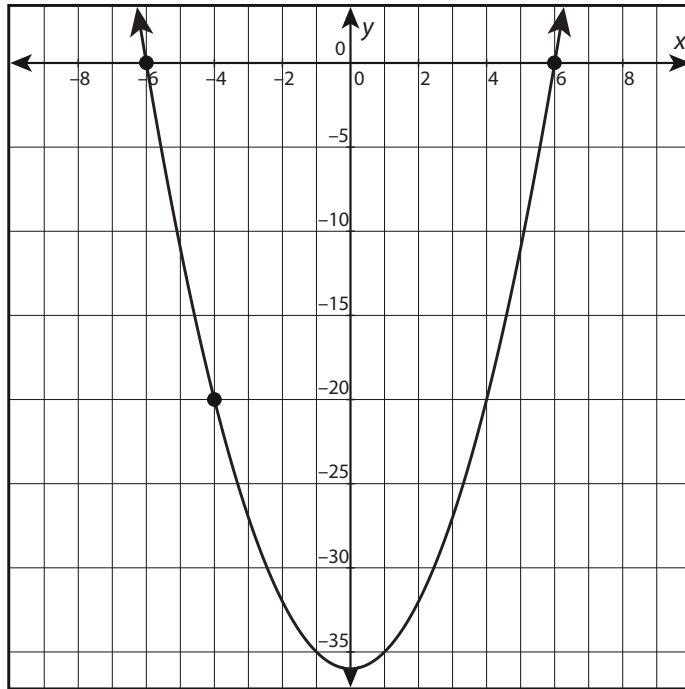# Name: Date:

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8.

Use the given information to solve the following problems.

9. A family portrait hanging on the wall has a frame with dimensions of 11 inches by 9 inches. The width of the frame is represented by *x*. What are the dimensions of the portrait if its area is 35 square inches?
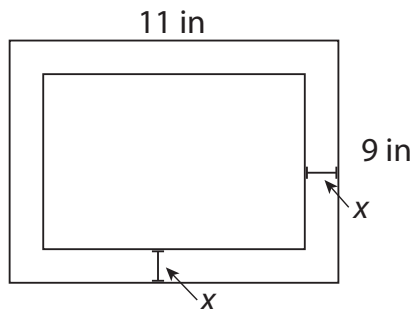
10. A bird takes off from the roof of a 250-foot-tall building and flies to the ground below. Its path takes the form of a parabola. The bird's height can be modeled by $h(t) = -t^2 + 15t + 250$, where $h(t)$ is the height of the bird above ground in feet t seconds after leaving the roof. After how many seconds does the bird land on the ground?