

Unit 7: Introduction to Quadratic Functions

PRACTICE · SET 2

Name: _____ Date: _____

Solve each problem and write your exact final answer on the line; show your work where needed.

1. Evaluate the quadratic function $f(x) = x^2 + 3x - 5$ at $x = 4$. What is $f(4)$?

Answer: _____

3. A parabola is written in vertex form as $f(x) = (x - 2)^2 + 3$. Give the coordinates of its vertex as an ordered pair.

Answer: _____

5. For the quadratic $f(x) = x^2 - 6x + 5$, use $x = -b/(2a)$ to find the axis of symmetry. Give the x -value.

Answer: _____

7. Find the y -intercept of the quadratic $f(x) = x^2 - 4x + 7$. Give your answer as an ordered pair.

Answer: _____

9. In a growing pattern, figure n is built from n^2 tiles (a quadratic growth pattern). How many tiles are in figure 6?

Answer: _____

11. For the quadratic $f(x) = 3(x - 2)(x + 4)$, find $f(0)$.

Answer: _____

2. Evaluate the quadratic function $g(x) = 2x^2 - 5$ at $x = -3$. What is $g(-3)$?

Answer: _____

4. A parabola is written in vertex form as $f(x) = (x + 4)^2 - 7$. Give the coordinates of its vertex as an ordered pair.

Answer: _____

6. Find the zeros (x -intercepts) of $f(x) = (x - 3)(x + 5)$. List both x -values.

Answer: _____

8. A quadratic function gives $f(1) = 3$, $f(2) = 8$, $f(3) = 15$, and $f(4) = 24$. What is the constant second difference of these output values?

Answer: _____

10. The quadratic $f(x) = (x - 1)(x - 7)$ has its x -intercepts at $x = 1$ and $x = 7$. Find the x -coordinate of the vertex (the midpoint of the intercepts).

Answer: _____

12. A ball's height is modeled by $h(t) = -16t^2 + 32t$, where t is in seconds. Find $h(1)$.

Answer: _____