

# 5.1 – 5.4 Review Worksheet

Name: \_\_\_\_\_

Period: \_\_\_\_\_

**Directions:** Find the vertex and axis of symmetry and describe the transformation of each quadratic function.  
Then graph the function.

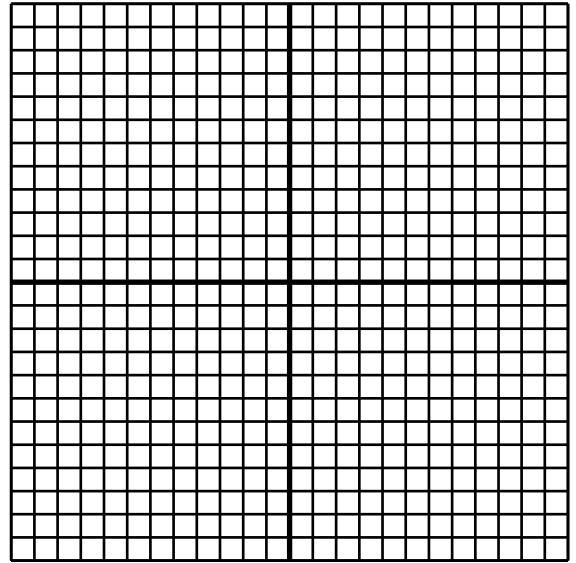
1.  $f(x) = (x - 5)^2 - 4$

Vertex: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

Describe the transformation: \_\_\_\_\_

\_\_\_\_\_



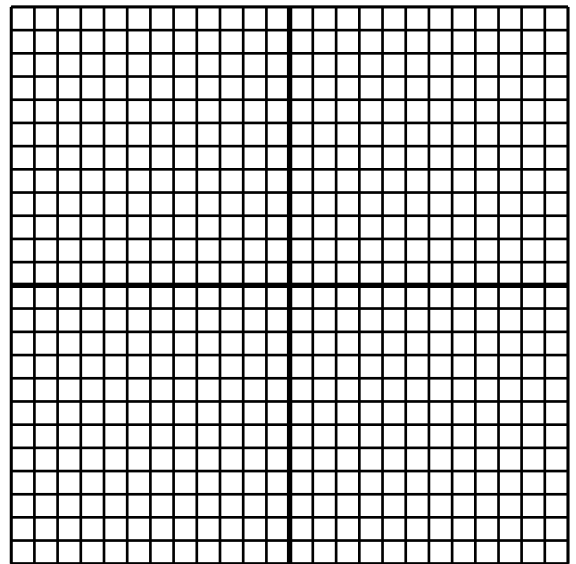
2.  $f(x) = -(x + 2)^2 + 6$

Vertex: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

Describe the transformation: \_\_\_\_\_

\_\_\_\_\_



3.  $y = 2(x + 4)^2 - 8$

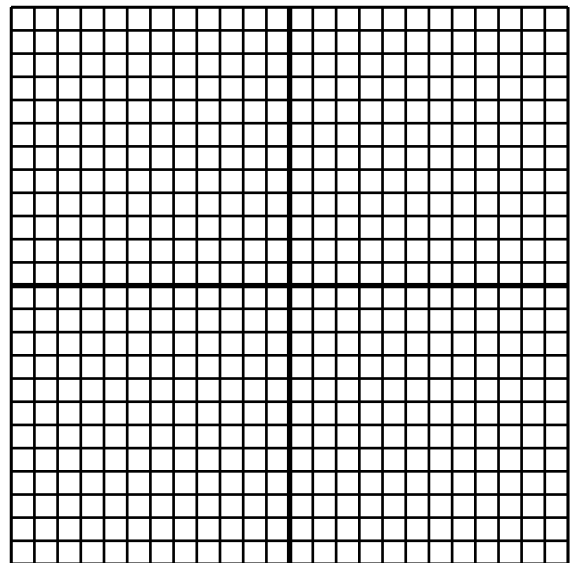
Vertex: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

Describe the transformation: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



4.  $y = -\frac{1}{2}(x-6)^2 + 4$

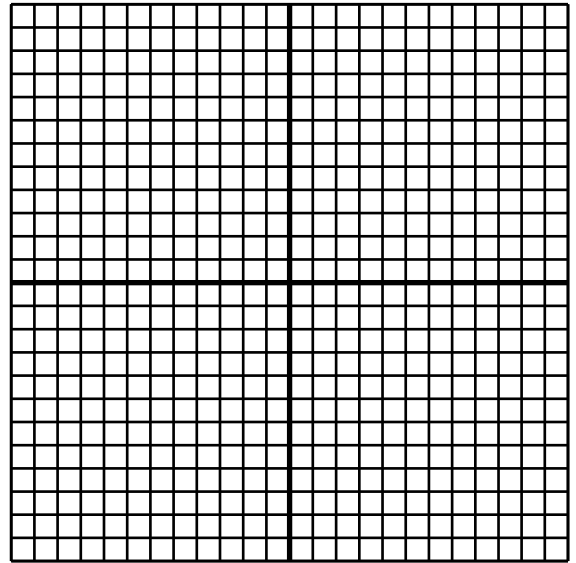
Vertex: \_\_\_\_\_

Axis of Symmetry: \_\_\_\_\_

Describe the transformation: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**Directions:** Find the roots of each quadratic function by either factoring, factoring with the X-Game, or completing the square. **Show your work.**

5.  $f(x) = x^2 - 16x + 60$

6.  $f(x) = 2x^2 + 13x + 20$

7.  $f(x) = x^2 - 10x + 8$

8.  $f(x) = 8x^2 + 42x - 36$

9.  $f(x) = x^2 + 3x - 28$

10.  $f(x) = x^2 + 8x - 6$

11.  $f(x) = -5x^2 + 180$

12.  $f(x) = 3x^2 - 21x - 180$

**Directions:** Rewrite each standard quadratic function in vertex form, then find the vertex. **Show your work.**

13.  $f(x) = x^2 - 10x + 17$

14.  $f(x) = x^2 + 7x - 2$

15.  $f(x) = -x^2 + 12x - 27$

16.  $f(x) = 4x^2 - 24x + 15$

17.  $f(x) = 2x^2 - 14x + 27$

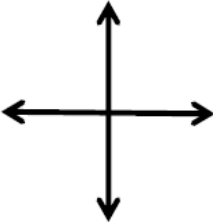
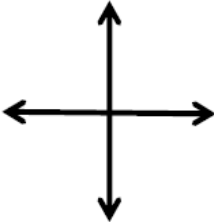
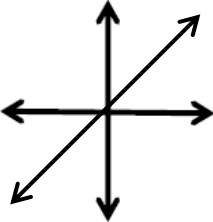
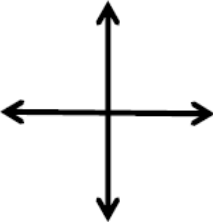
18.  $f(x) = -3x^2 + 18x - 7$

**Directions:** Answer each word problem by setting up a quadratic equation and solving by factoring or factoring with the X-Game. **Show all work.**

19. The length of a room is 5 ft shorter than the width. The area of the room is 204 square ft. What are the dimensions of the room?

20. A painting has a length that is twice plus 15 cm more than its height. The area of the painting is 1625 cm<sup>2</sup>. What are the dimensions of the painting?

**Directions:** Complete the parent function chart.

PARENT FUNCTION	Quadratic			
EQUATION (FUNCTION)				$f(x) =  x $
GRAPH				
DOMAIN: SET NOTATION				
RANGE: SET NOTATION		$\{y \mid y = c\}$		
DOMAIN: INTERVAL NOTATION				
RANGE: INTERVAL NOTATION				