Lessons 2.1 and 2.2 Quiz Review

Name _____

Block _____ Date_____

Graph each quadratic using the provided table.

1. $f(x) = 2x^2 + 12x + 19$

x	f(x) = $2x^2$+ 12x + 19	(x, f(x))
-5		
-4		
-3		
-2		
-1		
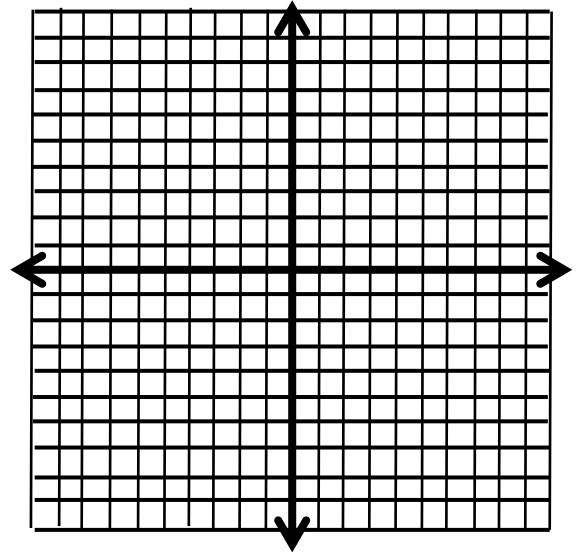
2. $g(x) = -x^2 + 4x - 2$

x	f(x) = $-x^2$ + 4x – 2	(x, f(x))
0		
1		
2		
3		
4		
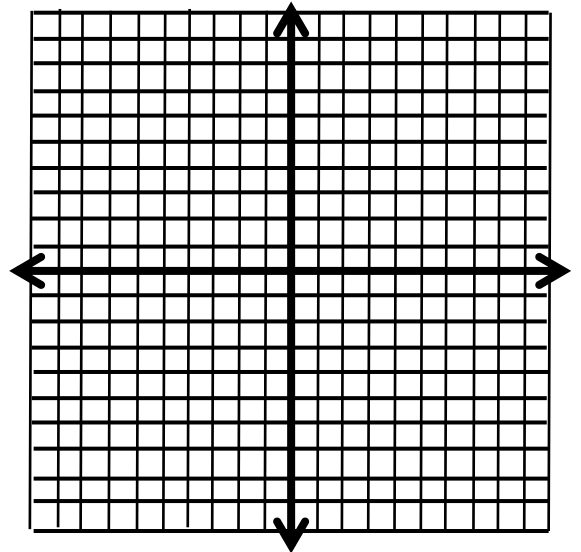
Describe the transformation of each function.

3. $f(x) = x^2 - 2$

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

5. $f(x) = -\frac{1}{7}x^2$

6. $f(x) = (x + 5)^2$

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

8. $f(x) = -20x^2$

9. $f(x) = \left(\frac{1}{3}x\right)^2$

10. $f(x) = -\frac{1}{5}(x - 1)^2$

11. $f(x) = -(x - 4)^2 - 9$

12. $f(x) = -(2x - 7)^2 + 9$

Use the description to write each quadratic function in vertex form, $f(x) = a(x - h)^2 + k$

13. The parent function $f(x) = x^2$ is reflected across the x - axis, vertically compressed by a factor of $\frac{1}{2}$, and translated 1 unit right to create g(x).

14. The parent function $f(x) = x^2$ is vertically stretched by a factor of 2.5 and translated 2 units left and 1 unit up to create g(x).

For each function (a) determine whether the graph opens upward or downward, (b) find the axis of symmetry (AOS), (c) find the vertex, (d) find the y - intercept, (e) find the minimum or maximum value, and (f) graph the function.

15. $f(x) = 3x^2 - 12x + 8$ a = _____ b = _____ c = _____

Opens: _____

AOS: _____

Vertex: _____

y - int: _____

Min/Max: _____

Domain: _____ Range: _____

x					
y					

16. $f(x) = -x^2 - 2x - 2$ $a = \_\_\_\_$ $b = \_\_\_\_\_$ $c = \_\_\_\_\_$

Opens: _____

AOS: _____
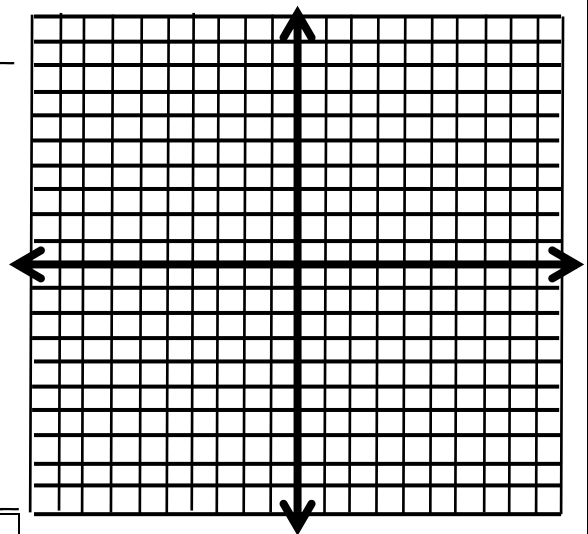
Vertex: _____

y - int: _____

Min/Max: _____

Domain: _____ Range: _____

x					
y					

17. $f(x) = -x^2 - 8x - 13$ $a = _____$ $b = _____$ $c = _____$

Opens: _____

AOS: _____
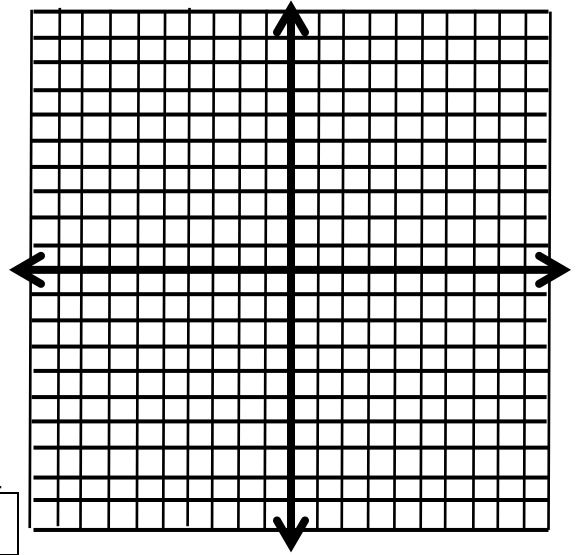
Vertex: _____

y - int: _____

Min/Max: _____

Domain: _____ Range: _____

x					
y					

18. $f(x) = x^2 - 4x + 7$ $a = \_\_\_\_$ $b = \_\_\_\_\_$ $c = \_\_\_\_\_$

Opens: _____

AOS: _____
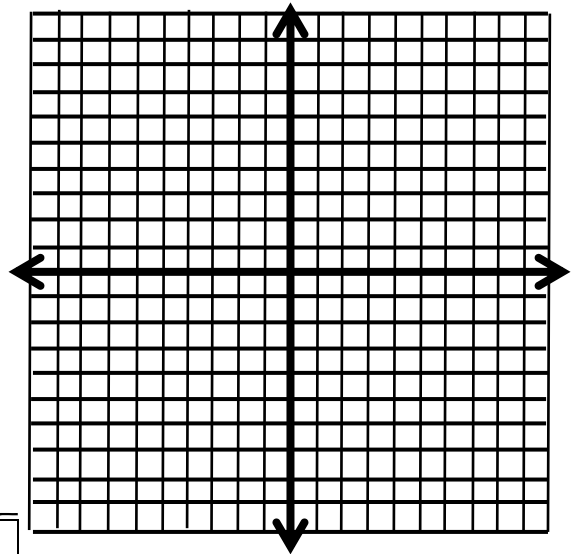
Vertex: _____

y - int: _____

Min/Max: _____

Domain: _____ Range: _____

x					
y					
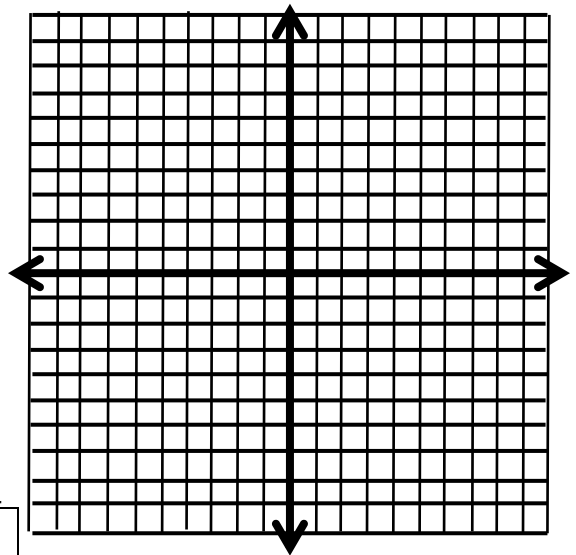
19. A company's weekly revenue in dollars is given by R(x) = -2x² + 2000x, where *x* is the number of items produced during a week.

    a. What amount of items will produce the maximum revenue?

    b. What is the maximum revenue?

20. A model rocket is projected straight upward from the ground level according to the height equation h(t) = -16t² + 192t, where *h* is the height in feet and *t* is the time in seconds.

    a. How long will it take the rocket to reach its maximum height?

    b. What is the maximum height?