Name: _____ **Unit 3:** Parent Functions & Transformations

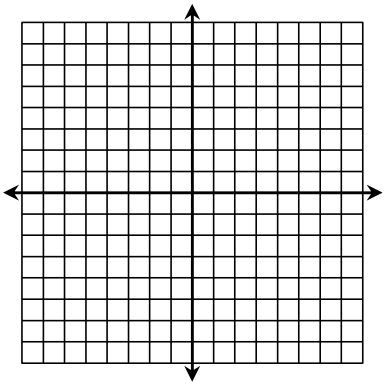
Date: _____ **Per:** _____ **Homework 5:** Graphing Quadratic Equations & Inequalities (Standard Form)

**** This is a 2-page document! ****

Determine whether the function has a minimum or maximum. Find the axis of symmetry, vertex, then graph using a table of values. Give the domain and range.

1. $f(x) = x^2 - 8x + 17$

x	$f(x)$



Minimum / Maximum

Axis of Symmetry: _____

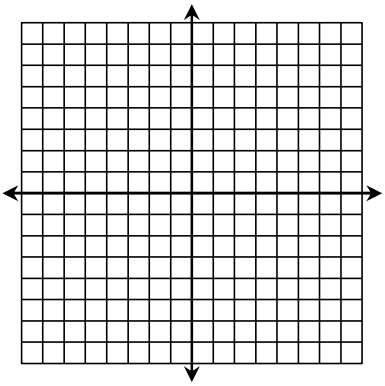
Vertex: _____

Domain: _____

Range: _____

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

x	$f(x)$



Minimum / Maximum

Axis of Symmetry: _____

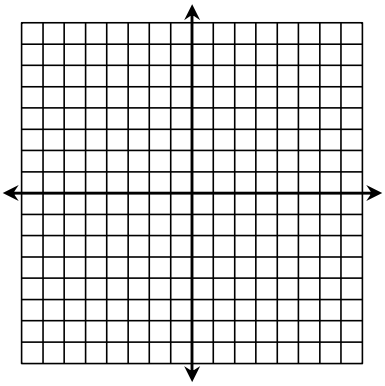
Vertex: _____

Domain: _____

Range: _____

3. $f(x) = 3x^2 + 1$

x	$f(x)$



Minimum / Maximum

Axis of Symmetry: _____

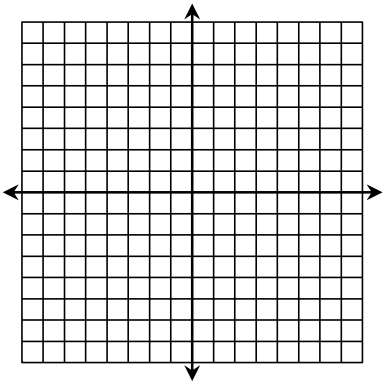
Vertex: _____

Domain: _____

Range: _____

4. $f(x) = -2x^2 + 8x - 11$

x	$f(x)$



Minimum / Maximum

Axis of Symmetry: _____

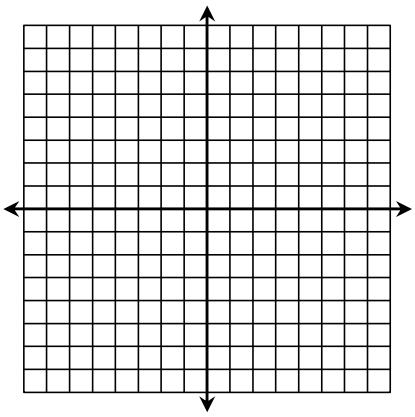
Vertex: _____

Domain: _____

Range: _____

Graph each function. Give the domain and range.

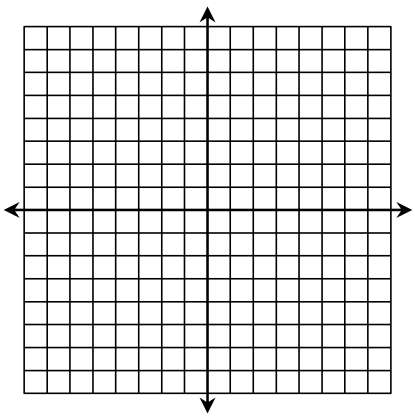
5. $f(x) = \begin{cases} x^2 + 4x & \text{if } x < -3 \\ 2 & \text{if } x \geq -3 \end{cases}$



Domain: _____

Range: _____

6. $f(x) = \begin{cases} -\frac{2}{3}x + 5 & \text{if } x \leq 0 \\ -x & \text{if } 0 < x \leq 4 \\ -x^2 + 4x + 4 & \text{if } x > 4 \end{cases}$



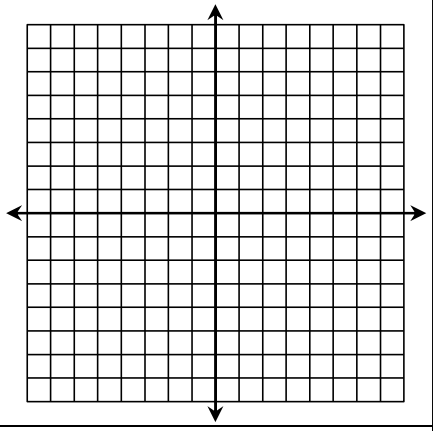
Domain: _____

Range: _____

Graph each inequality.

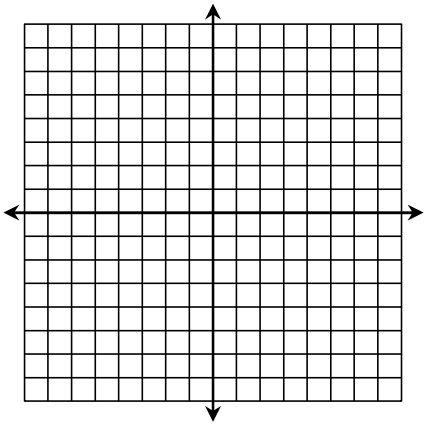
7. $y \leq x^2 + 6x + 5$

x	$f(x)$



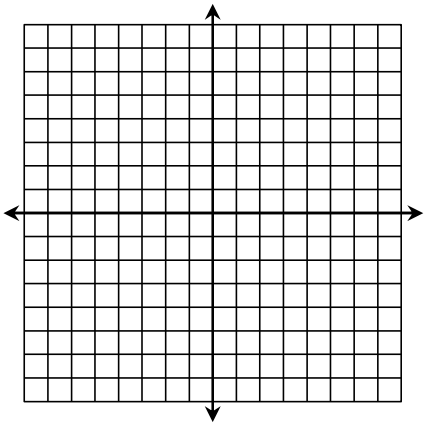
8. $y > -2x^2 + 8x - 12$

x	$f(x)$



9. $y < -x^2 + 12x - 29$

x	$f(x)$



10. $y \geq 4x^2 - 16x + 15$

x	$f(x)$