

Name: _____

Unit 3: Parent Functions & Transformations

Date: _____ Per: _____

Homework 6: Vertex Form of a Quadratic Function

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

Describe the transformation of each function compared to its parent function.

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

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

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

4. $f(x) = -(x - 7)^2 - 1$

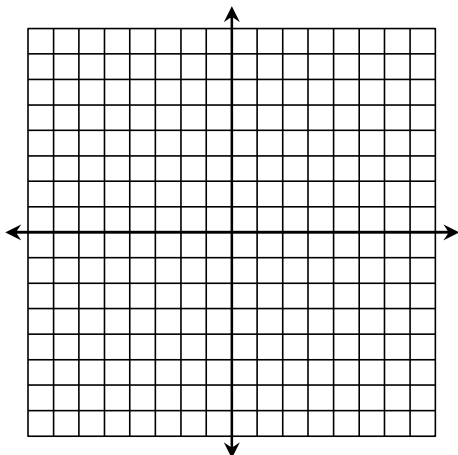
5. $f(x) = \frac{3}{2}x^2$

6. $f(x) = -\frac{2}{3}(x - 5)^2 + 2$

Give the vertex and axis of symmetry of each quadratic function, then graph.

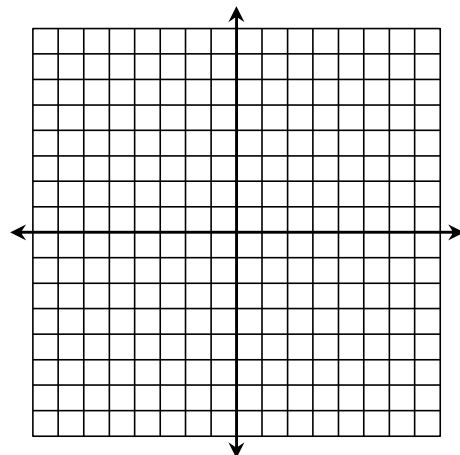
7. $f(x) = (x + 1)^2 - 8$

x	$f(x)$



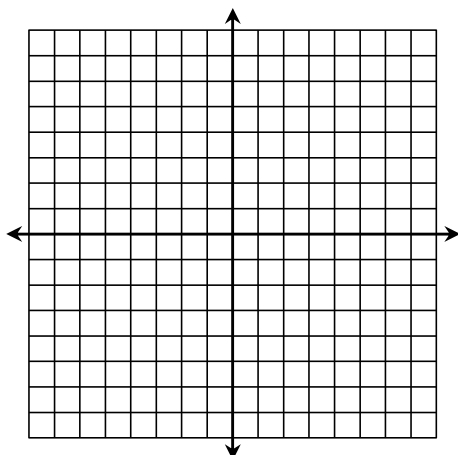
8. $f(x) = -(x + 5)^2 + 5$

x	$f(x)$



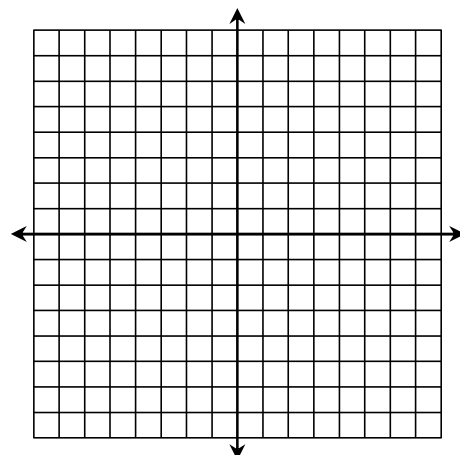
9. $f(x) = \frac{1}{2}x^2 - 3$

x	$f(x)$



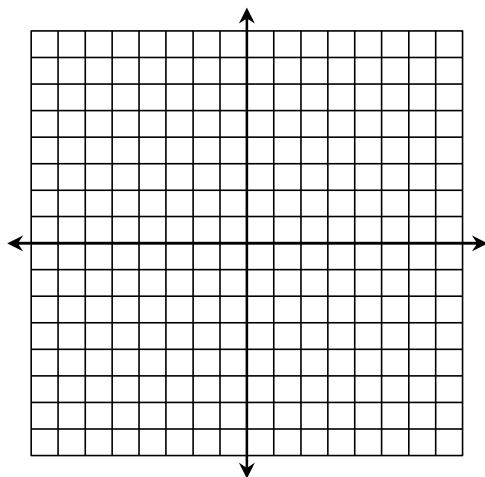
10. $f(x) = -3(x - 4)^2 + 1$

x	$f(x)$

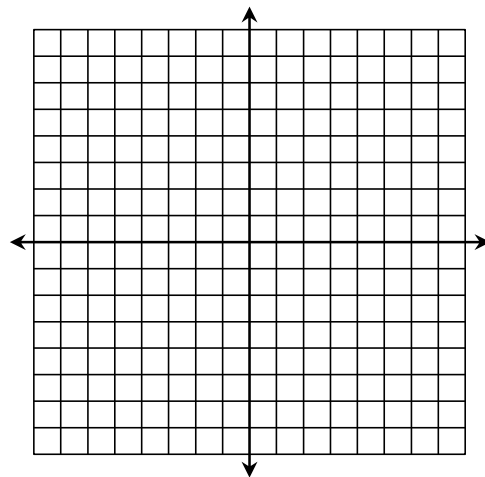


Graph each piecewise function.

11. $f(x) = \begin{cases} -x^2 + 8 & \text{if } x < 1 \\ 2x & \text{if } x > 1 \end{cases}$



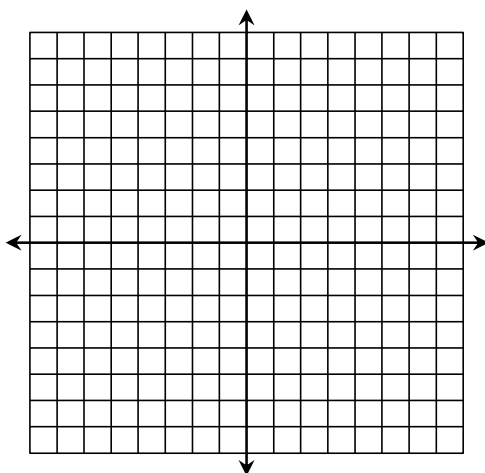
12. $f(x) = \begin{cases} -2 & \text{if } x < 4 \\ (x-4)^2 - 5 & \text{if } x \geq 4 \end{cases}$



Give the vertex and axis of symmetry of each quadratic inequality, then graph.

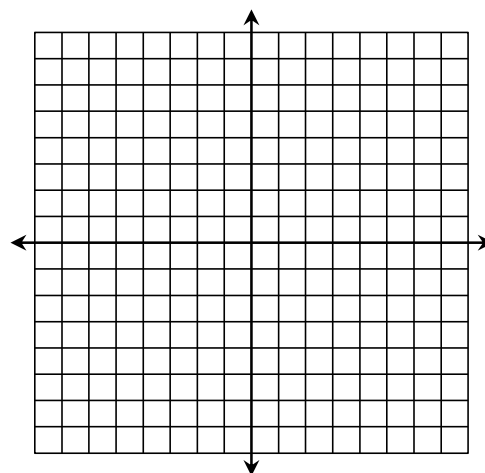
13. $y > -x^2$

x	$f(x)$



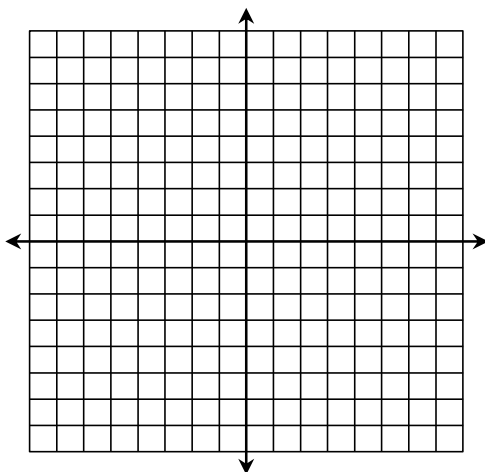
14. $y \geq 4x^2 - 7$

x	$f(x)$



15. $y < (x-1)^2 - 1$

x	$f(x)$



16. $y \leq -\frac{1}{2}(x+3)^2 + 4$

x	$f(x)$

