Review for Test #12 – Transformations of Functions

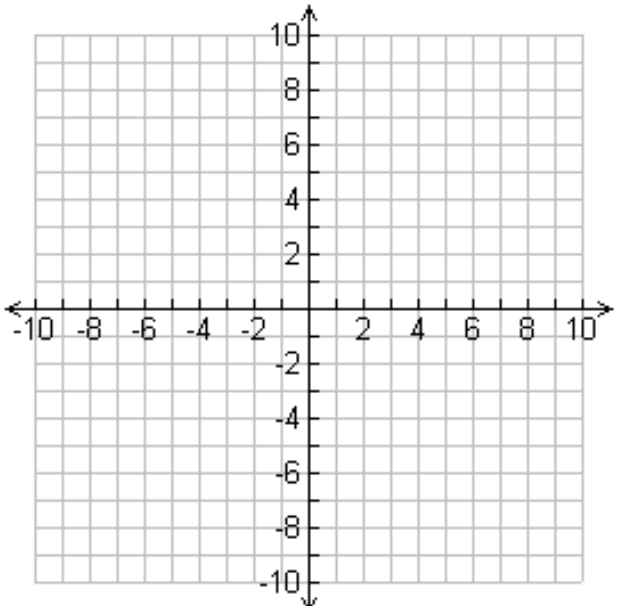
Name: _____ Class: _____

Graph the piecewise functions below.

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

Find $f(-1)$ = _____

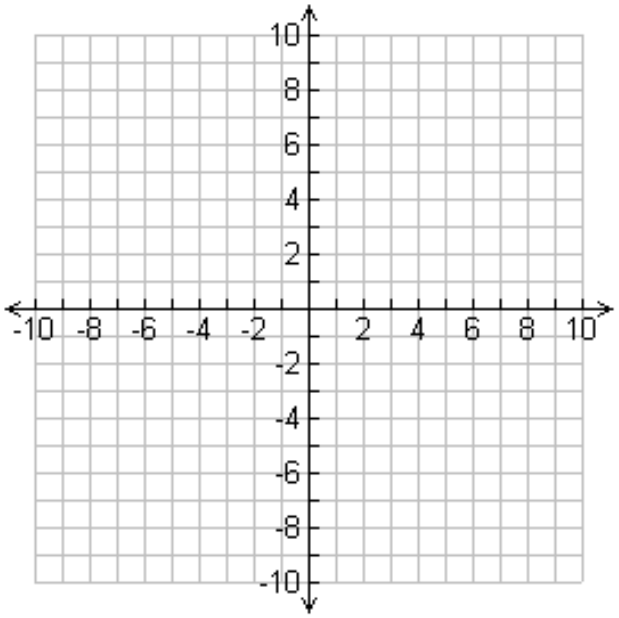
Find $f(3)$ = _____



2.) $f(x) = \begin{cases} (x-1)^2 - 2 & x < 1 \\ -2\sqrt{x-1} & x \geq 1 \end{cases}$

Find $f(-5)$ = _____

Find $f(1)$ = _____



For 3 – 4, rewrite each quadratic function in vertex form. Identify the vertex and state if it is a minimum or a maximum.

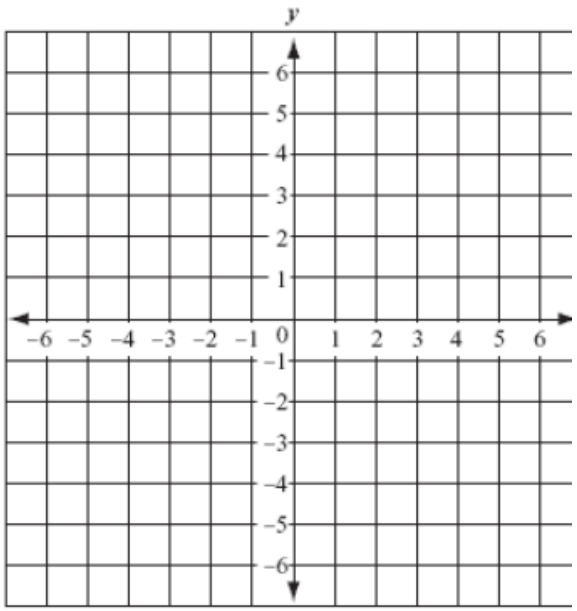
3.) $f(x) = 2x^2 - 4x + 5$

4.) $g(x) = -\frac{1}{2}x^2 - 20x + 3$

5 – 10: For each graph, you must first graph the parent function. Then, identify the transformations. Finally, complete the graph transformation.

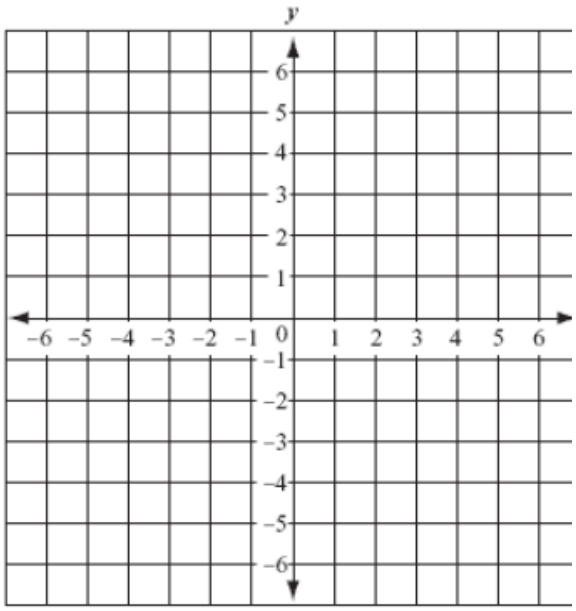
5.) $f(x) = \sqrt{2x}$

Transformations:



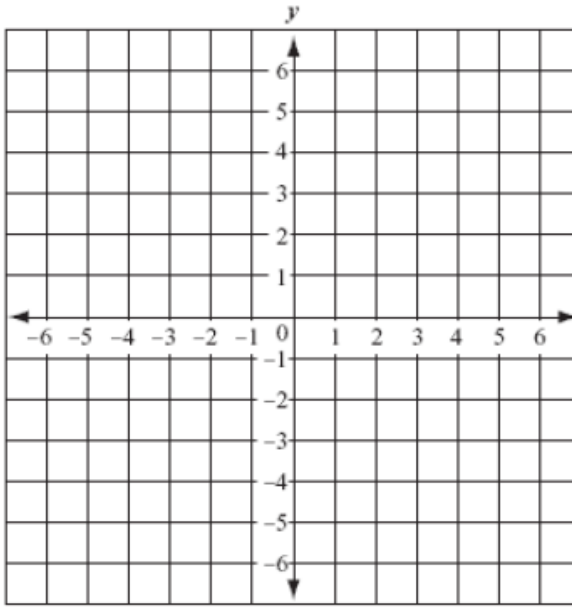
6.) $f(x) = 2^{x+1} - 3$

Transformations:



7.) $f(x) == 2\left|\frac{1}{3}x\right| + 1$

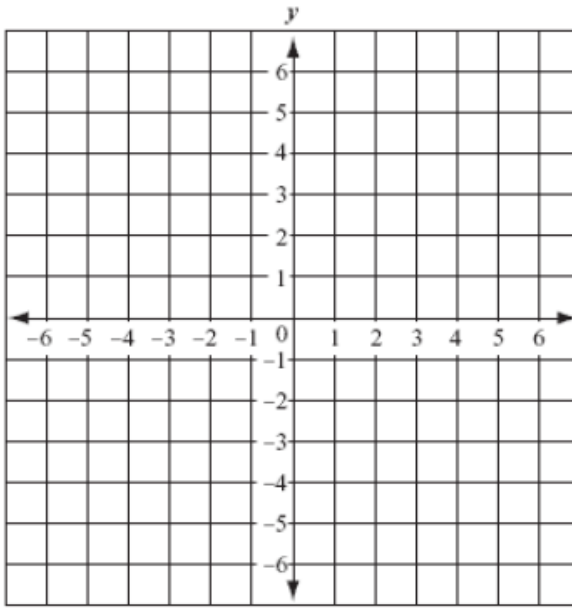
Transformations:



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

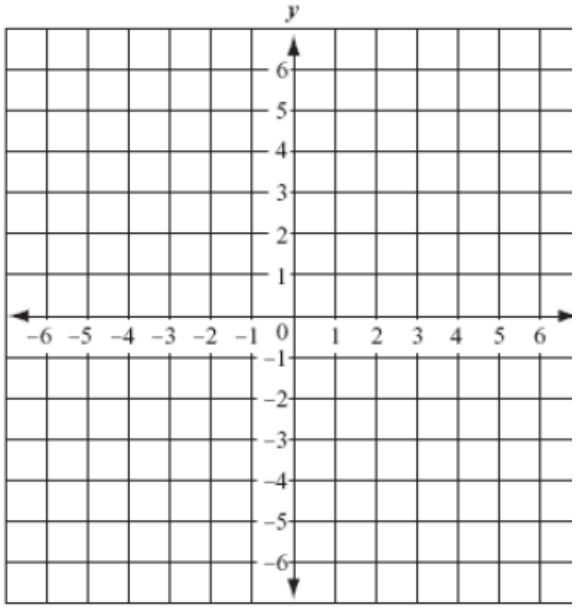
Put the equation in vertex form, first.

Transformations:



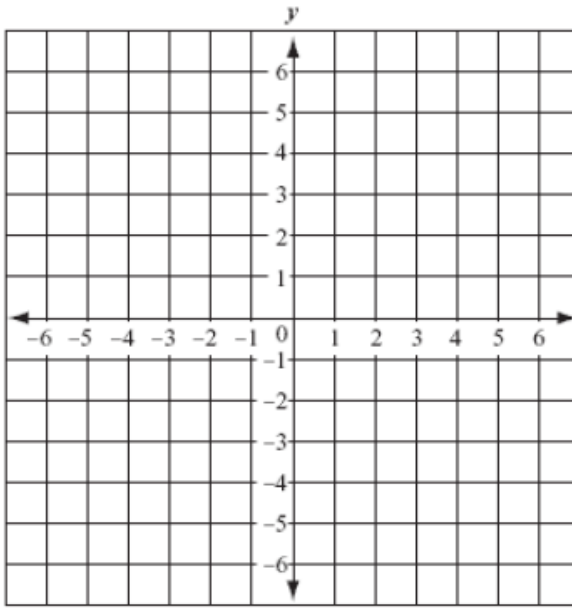
9.) $f(x) = \frac{1}{2}(x-3)^3$

Transformations:



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

Transformations:



11.) Solve the following system of equations:

$y = x^2 + 4x + 1$

$y - 4 = 2x$