

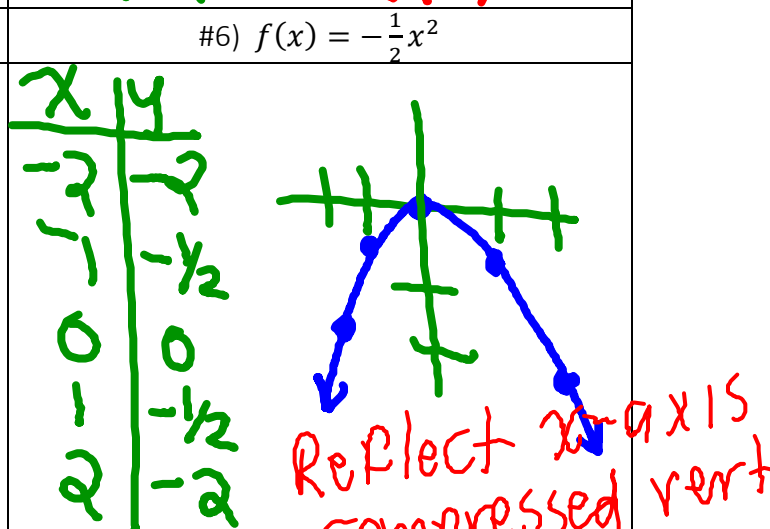
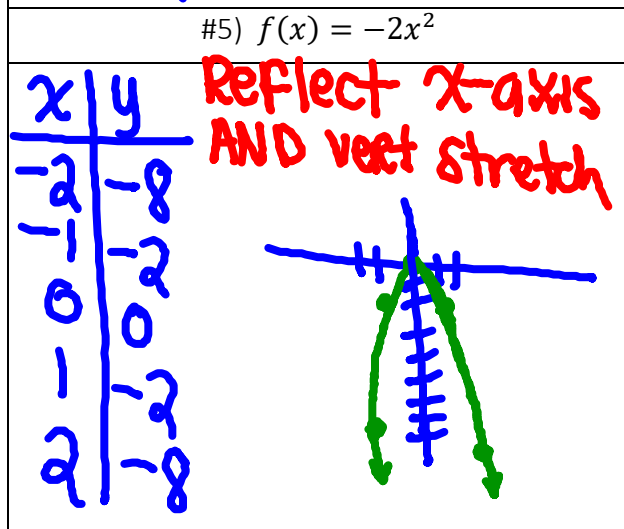
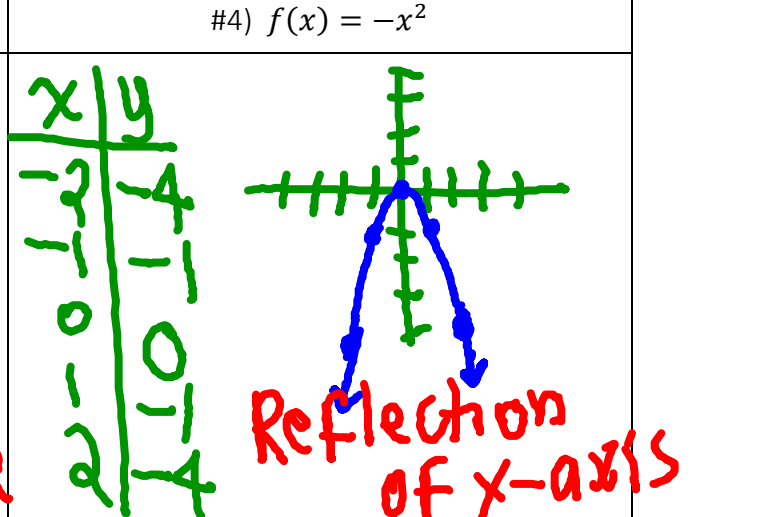
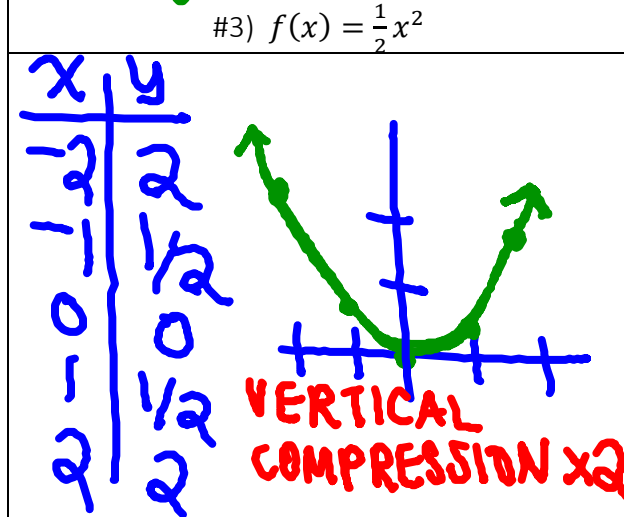
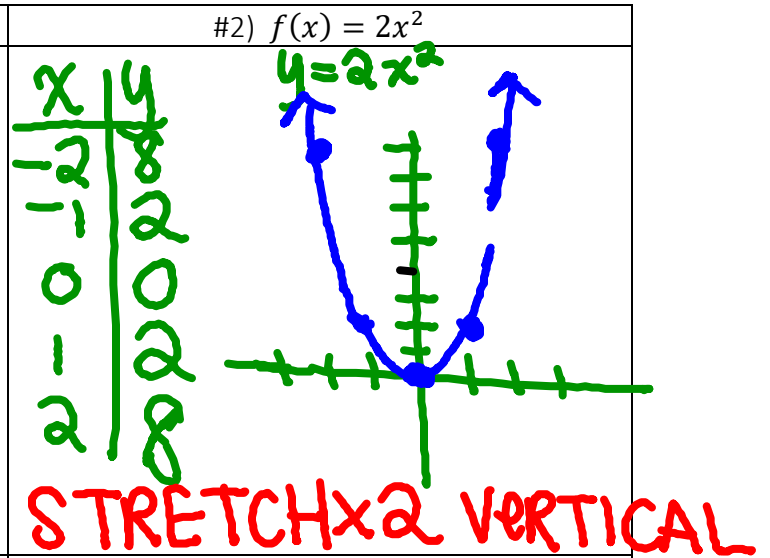
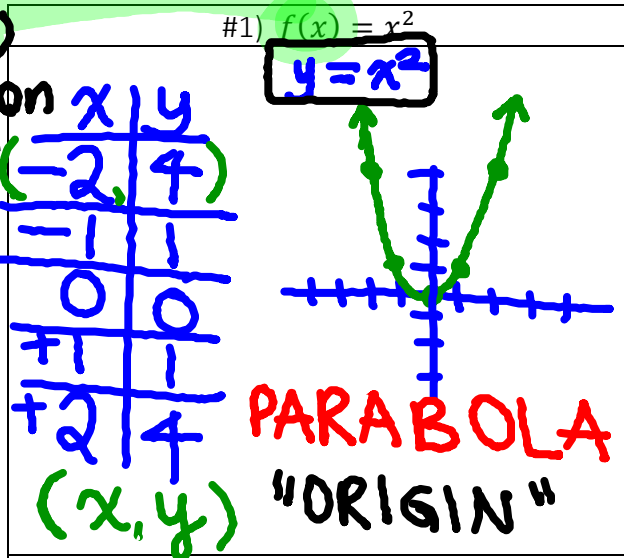
NAME: _____

U3:L1 **QUADRATIC** FUNCTIONS in vertex Form

Graph the following functions on separate graph paper.

Compare each graph to graph #1 using descriptive words in the space below:

"f(x)
function
of x"
= y



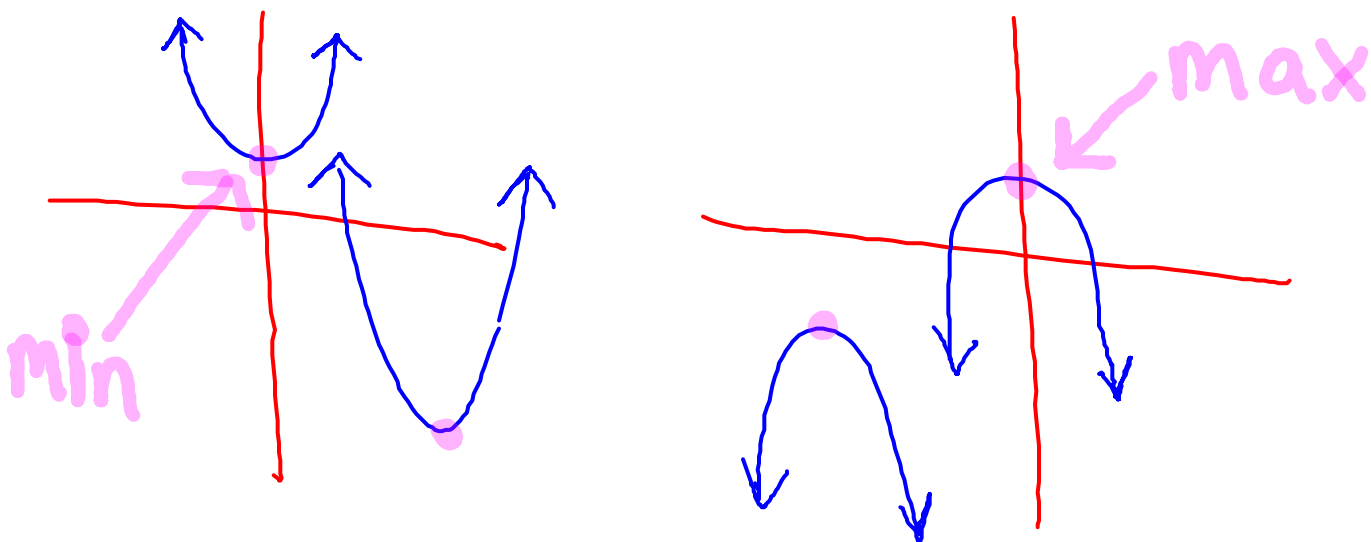
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Compare them to graph #1 using descriptive words in the space below:

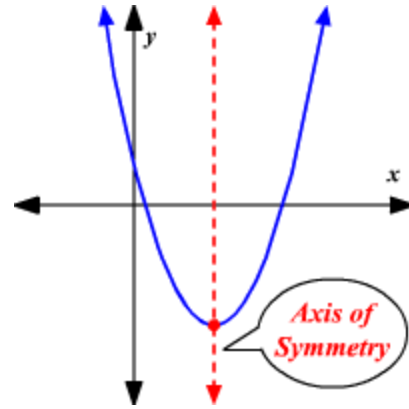
$\begin{array}{c c} x & y \\ \hline -2 & 8 \\ -1 & 5 \\ 0 & 4 \\ 1 & 5 \\ 2 & 8 \end{array}$	<p>transformed translation ↑ 4</p>	<p>#8) $f(x) = x^2 + 4$ $y = x^2 + 4$ $y = (-2)^2 + 4$ $y = 4 + 4$ $y = 8$</p>	
	<p>#9) $f(x) = x^2 - 3$ translated ↓ 3</p>		
	<p>#10) $f(x) = (x - 1)^2$ translated → 1</p>		
	<p>#11) $f(x) = (x + 2)^2$ translated ← 2</p>		

The graph of a quadratic function is always a parabola

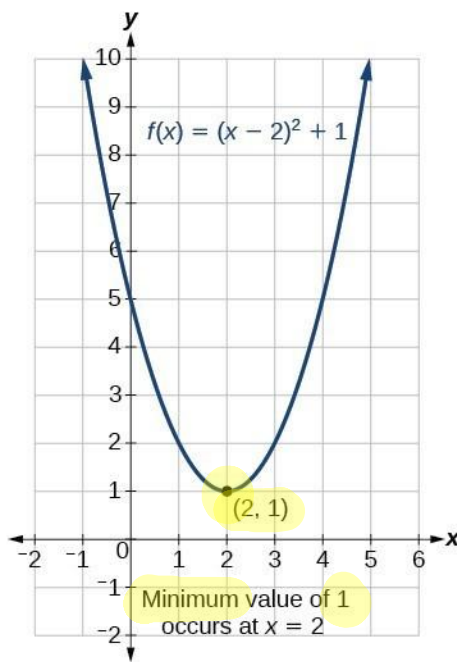
When the graph opens upward, the vertex is the lowest point on the graph, vice-versa for opening downward.



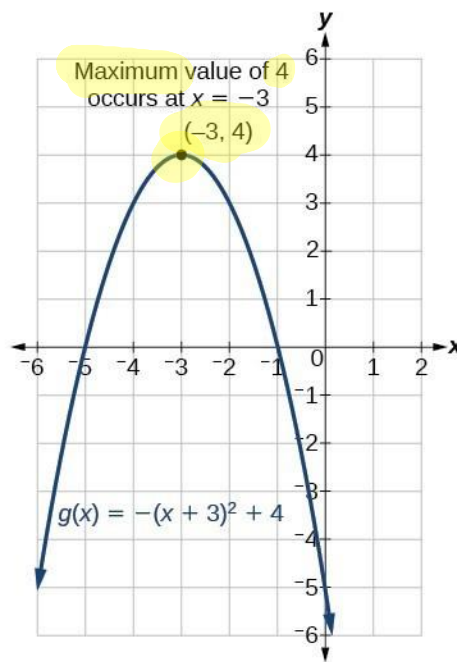
Parabolas are always symmetrical
about their lines of symmetry. This is
also called the axis of symmetry



The coordinate of the vertex tells
you the maximum or minimum value of the quadratic.

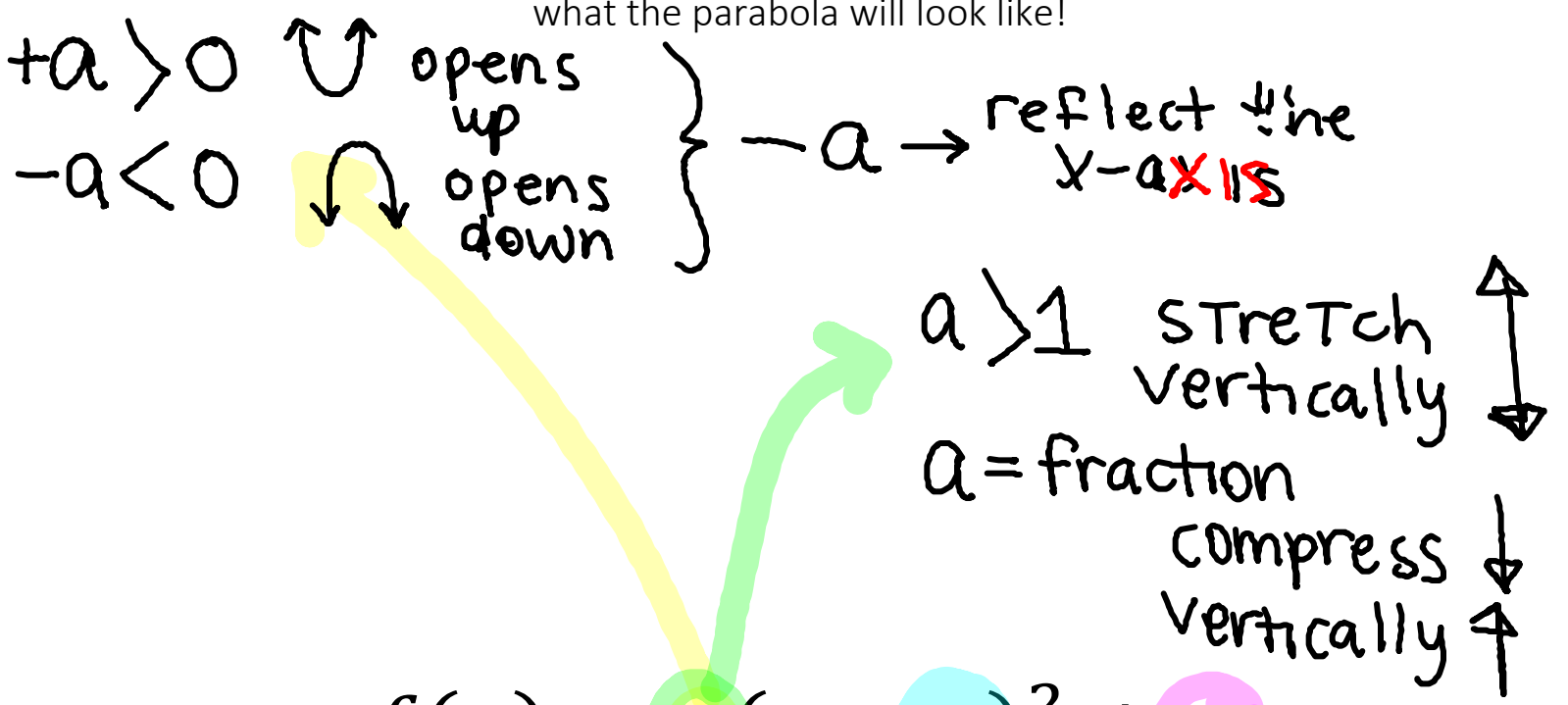


(a)



(b)

Quadratic functions written in vertex form can help you predict what the parabola will look like!



$$f(x) = a(x - p)^2 + q$$

Horizontal Translation

$x - p \rightarrow$

$x + p \leftarrow$

$+q \uparrow$
 $-q \downarrow$

vertical translation



practice: Pages 157-161 Qs: 1,3,4,6