Warm Ups (1.5)

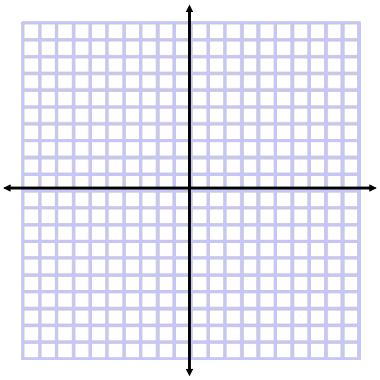
Complete the chart to identify the 3 forms of the quadratic and what important information each gives us.

Name	Equation	Tells us...

1.5 Lesson - Graphing Quadratics Using Transformations

Example 1: Graph $f(x) = x^2$.

x	$f(x)$



Last day we looked at the affect of a, h and k on $f(x) = x^2$.

In Summary, for $g(x) = a(x - h)^2 + k$,

When $h > 0$ (positive), the graph shifts to the right h units.
When $h < 0$ (negative), the graph shifts to the left h units.

When $k > 0$ (positive), the graph moves up k units.
When $k < 0$ (negative), the graph moves down k units.

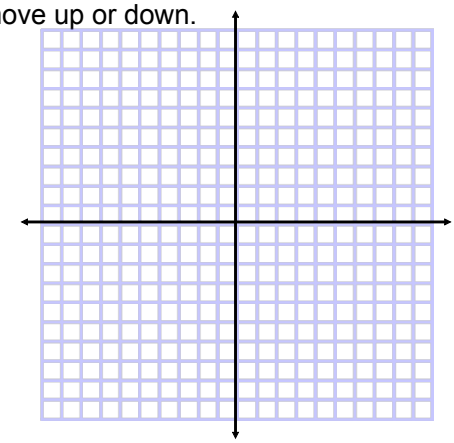
When $a > 1$, the graph is stretched vertically by a factor of a.
*(*Ignore the sign of a)*
When $0 < a < 1$, the graph is compressed vertically by a factor o a. (*ignore the sign of a)
When $a < 0$ (negative), the graph is reflected in the x-axis (vertical flip).

The vertex is (,).
The axis of symmetry is $x =$.
The step pattern is a(1,3,5)

Example 2: Use transformations to sketch the graph of $g(x) = (x + 2)^2 - 4$.

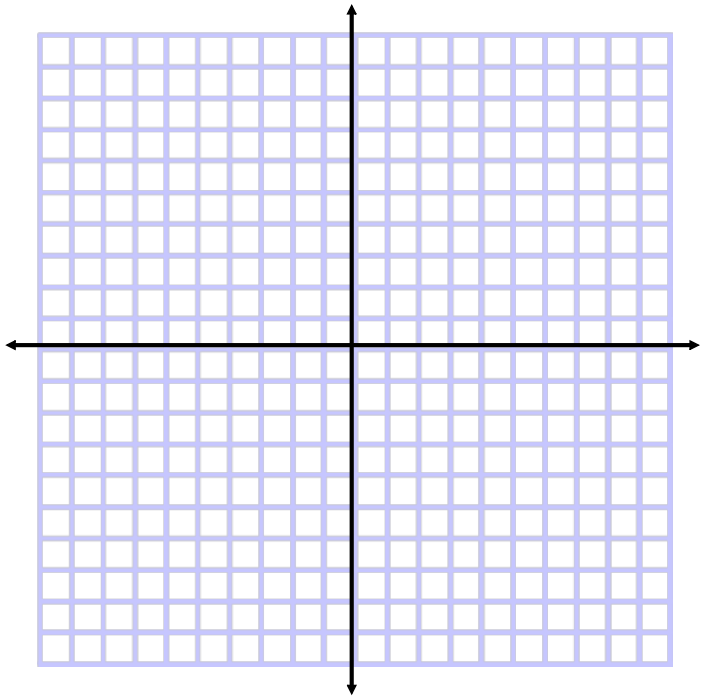
$a =$ $h =$ $k =$

Apply transformations in the order:
1. Graph $f(x) = x^2$
2. h - shift horizontally.
3. a - stretch or compress.
4. a - flip if $a < 0$.
5. k - move up or down.



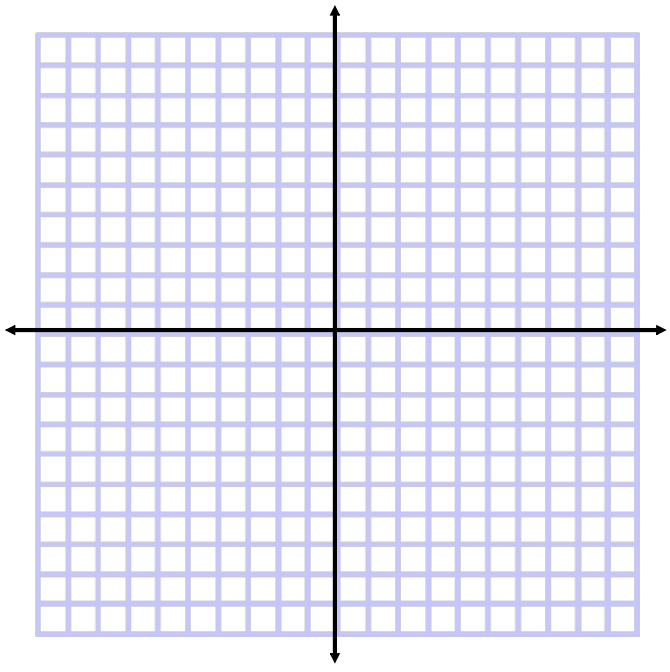
Example 3: Use transformations to sketch the graph of $h(x) = 2(x - 4)^2$

$a =$ $h =$ $k =$



Example 4: Use transformations to sketch the graph of $m(x) = -0.5x^2 + 3$

$a =$ $h =$ $k =$



HW Pg.47 #1, 2, 7, 8 Challenge: #10