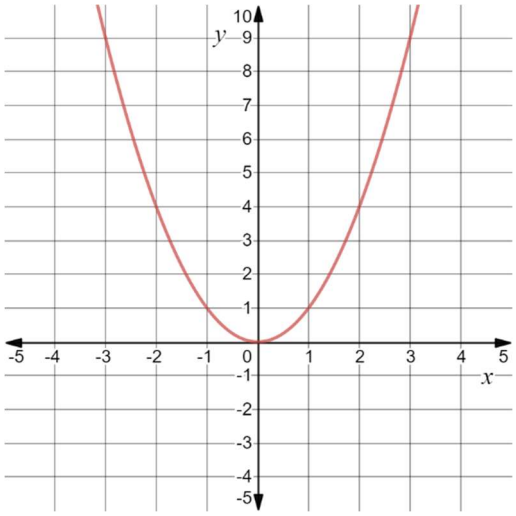
Name: _____ Date: _____

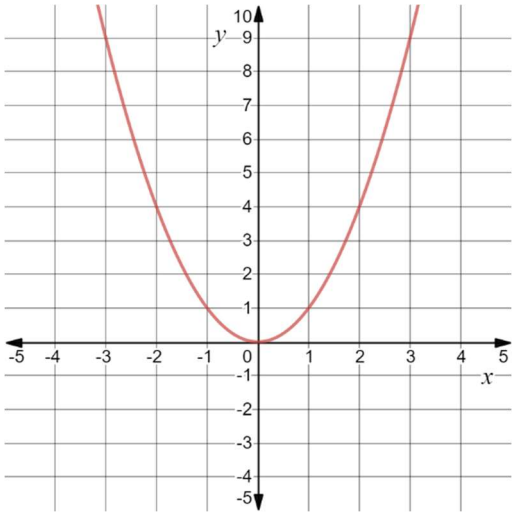
Learning Goal 3.1	Given a quadratic function in vertex form, identify the transformations that graph has undergone from the standard graph of $y = x^2$.

In your groups, without the use of a graphing calculator, graph these 2 functions using tables of values.

Graph $f(x) = -(x+3)^2$



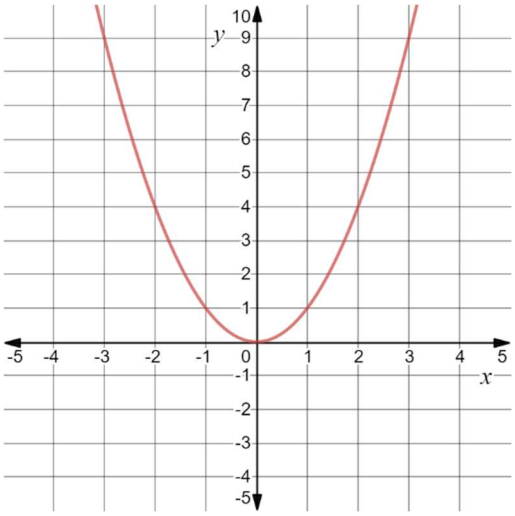
Graph $f(x) = -x^2 + 5$



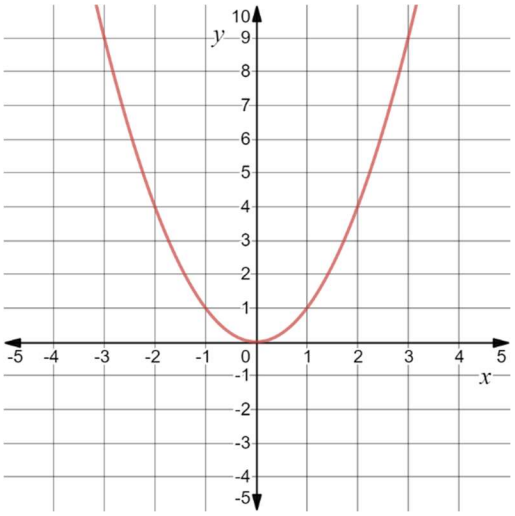
What conclusions can you draw about what is happening to your graph?

Use those conclusions to graph the following functions (trying not to use a table of values).

Graph $f(x) = -(x-1)^2$

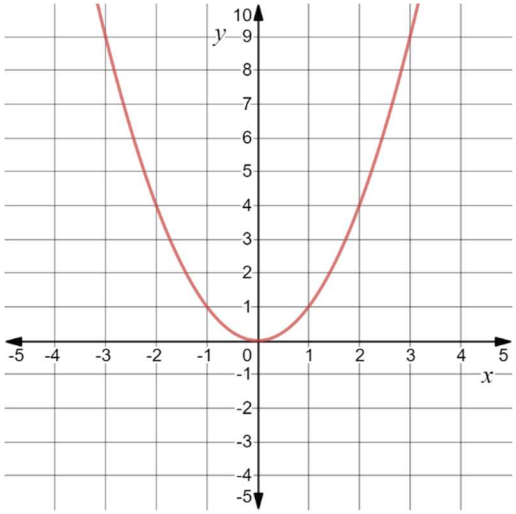


Graph $f(x) = -x^2 - 1$

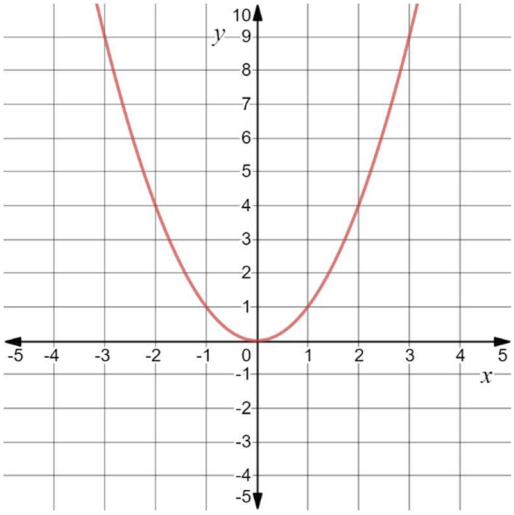


In your groups, without the use of a graphing calculator, graph these 2 functions using tables of values.

Graph $f(x) = 2x^2$



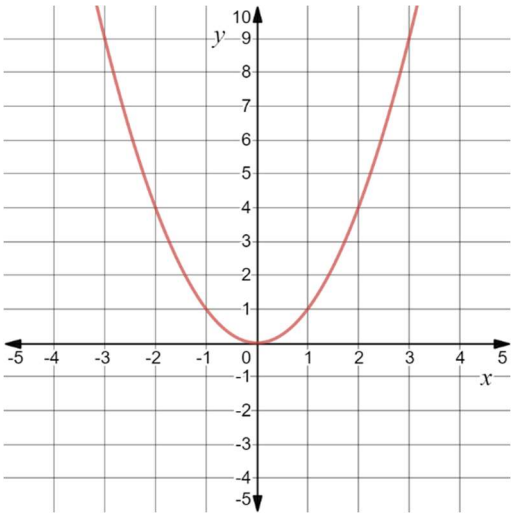
Graph $f(x) = \frac{1}{3}x^2$



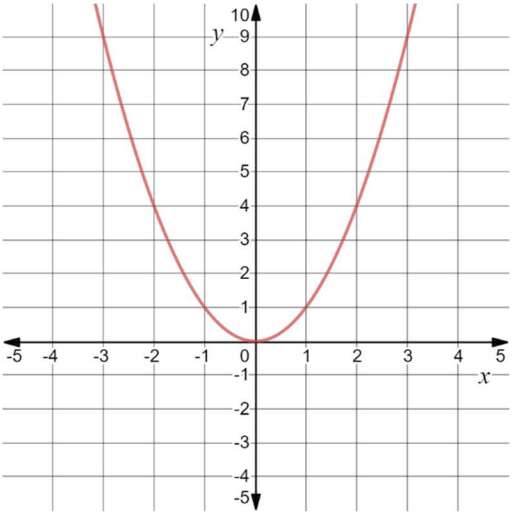
What conclusions can you draw about what is happening to your graph?

Use those conclusions to graph the following functions (trying not to use a table of values).

Graph $f(x) = 3x^2$



Graph $f(x) = \frac{1}{2}x^2$



What would you say about the graph of the function $f(x) = ax^2$ if

- $a < 0$?
- $0 < a < 1$?
- $a > 1$?