

Name: _____

Date: _____

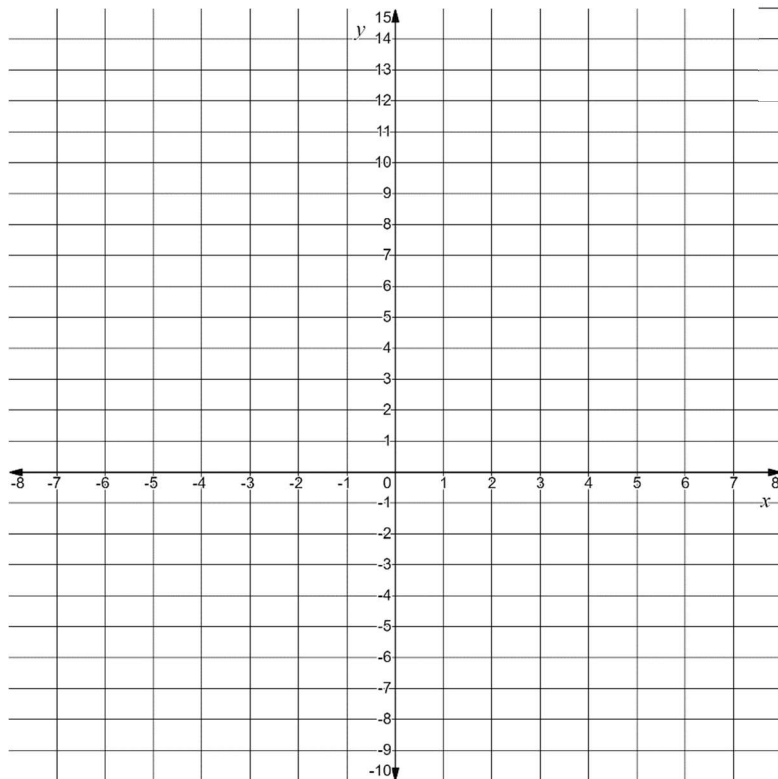
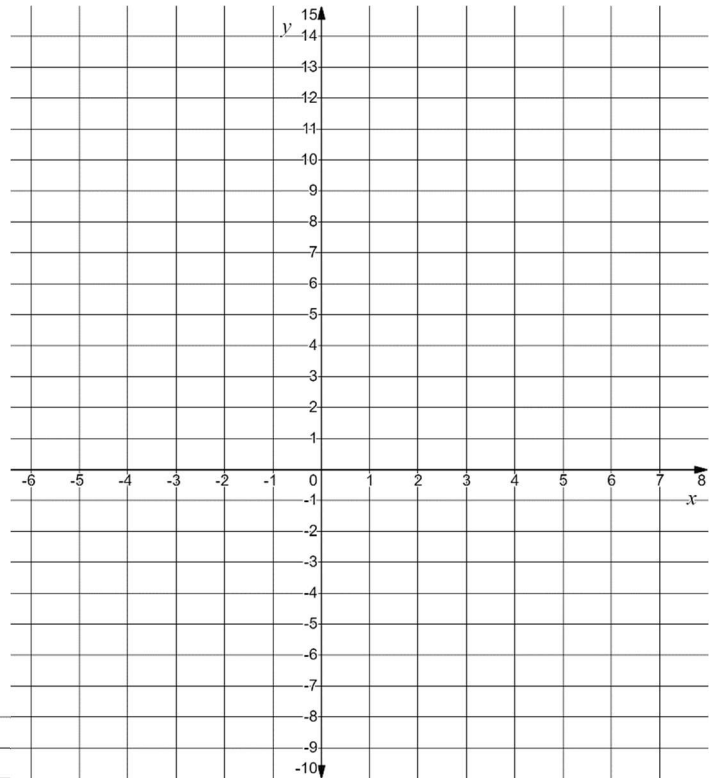
Learning Goal 3.1

Given a quadratic function, identify the transformations that graph has undergone from the standard graph of $y = x^2$.

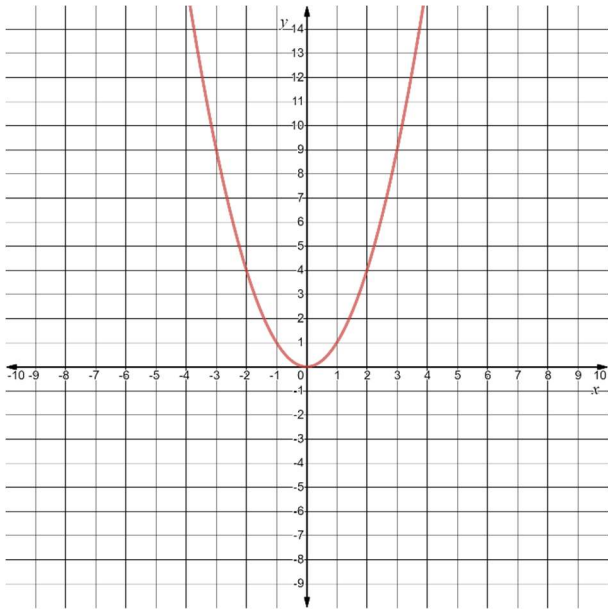
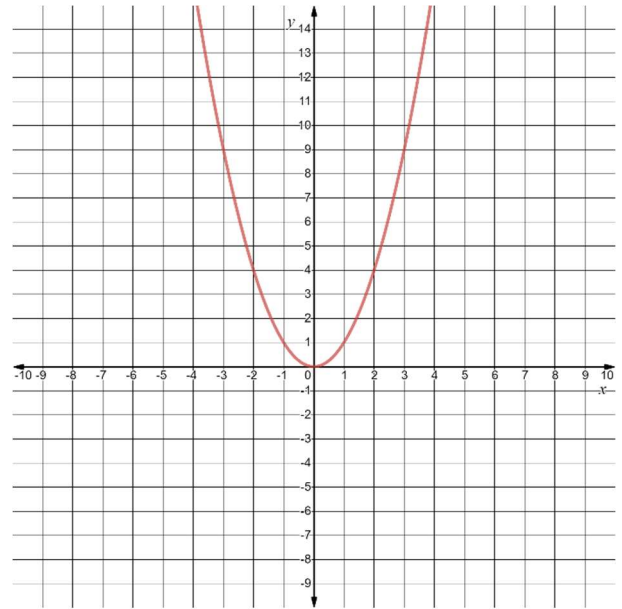
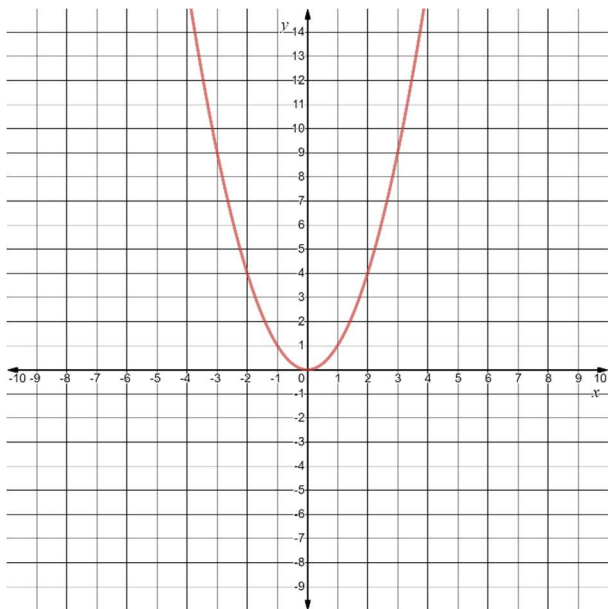
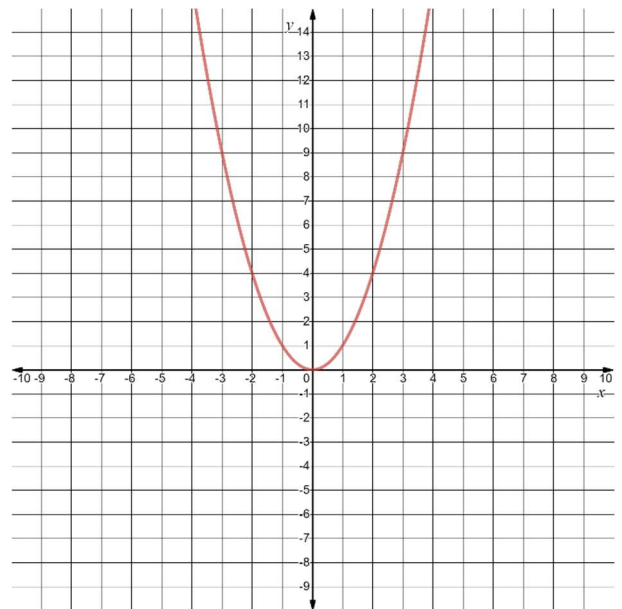
Assignment

Graph all the following functions on the same graph below. Try **not** to use a table of values.

- a. $f(x) = x^2$
- b. $g(x) = x^2 - 8$
- c. $h(x) = x^2 + 3$
- d. $j(x) = x^2 - 2$



- e. $f(x) = x^2$
- f. $n(x) = (x - 4)^2$
- g. $k(x) = (x - 2)^2$
- h. $m(x) = (x + 3)^2$

1. Graph $f(x) = (x - 3)^2 + 1$ Graph $f(x) = (x - 5)^2 - 4$ Graph $f(x) = (x + 2)^2 + 4$ Graph $f(x) = (x + 4)^2 - 6$ Describe the following translations using $f(x) = x^2$ as the reference. Verify your results by graphing.

- a. $f(x) = (x - 2)^2 + 1$ b. $f(x) = (x - 7)^2 + 8$ c. $f(x) = (x - 3)^2 + 2$ d. $f(x) = (x - 5)^2 + 6$
 e. $f(x) = (x - 1)^2 - 4$ f. $f(x) = (x - 6)^2 - 3$ g. $f(x) = (x - 8)^2 - 5$ h. $f(x) = (x - 4)^2 - 2$
 i. $f(x) = (x + 2)^2 + 1$ j. $f(x) = (x + 6)^2 + 3$ k. $f(x) = (x + 9)^2 + 6$ l. $f(x) = (x + 3)^2 + 9$
 m. $f(x) = (x + 8)^2 - 7$ n. $f(x) = (x + 1)^2 - 5$ o. $f(x) = (x + 4)^2 - 2$ p. $f(x) = (x + 5)^2 - 8$