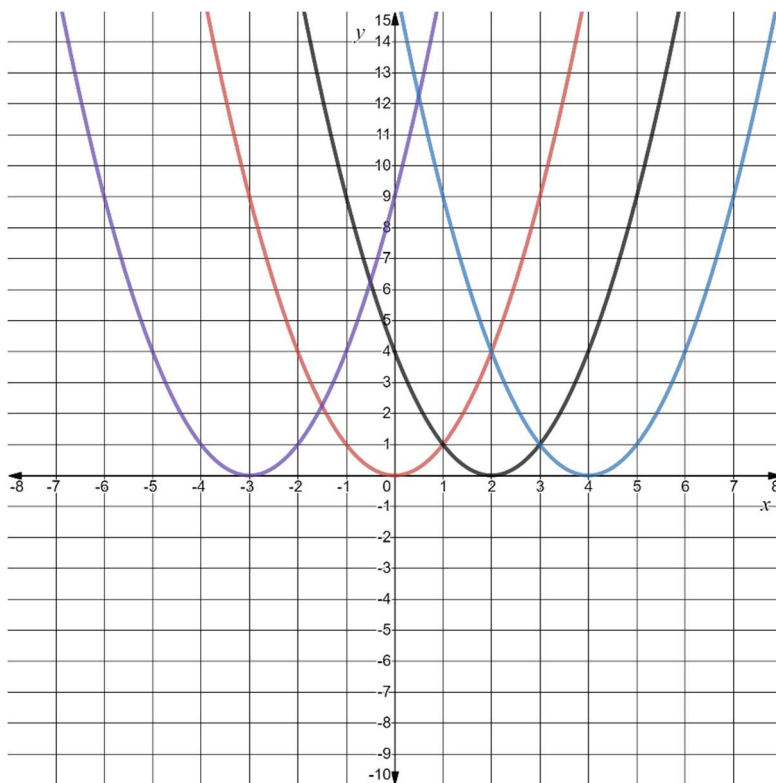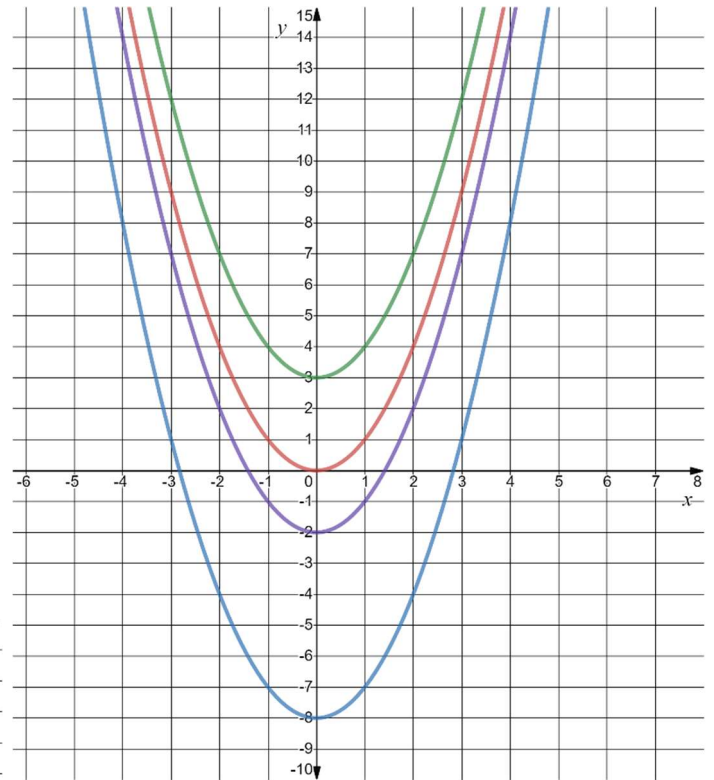Name: _____   Date: _____

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

Assignment - Answers

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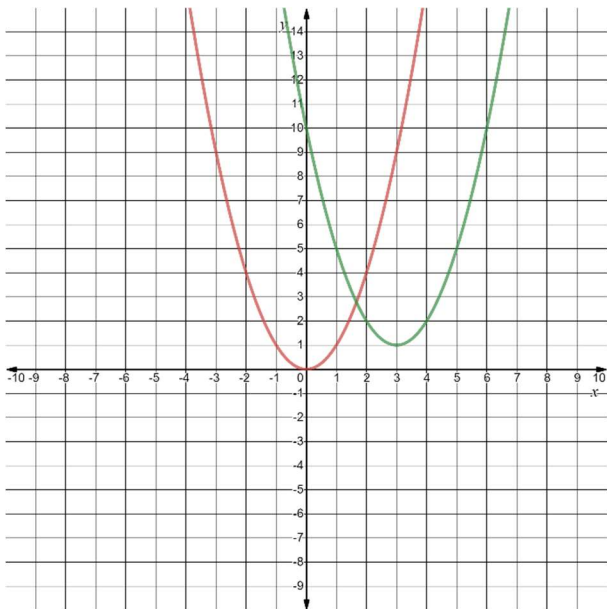
1. Graph all the following functions on the same graph below. Try **not** to use a table of values.

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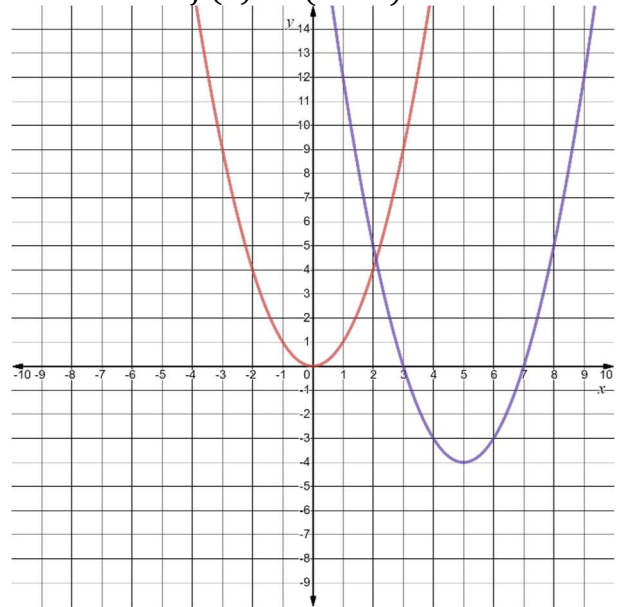
c. $h(x) = x^2 + 3$ d. $j(x) = x^2 - 2$

e. $f(x) = x^2$ f. $n(x) = (x - 4)^2$

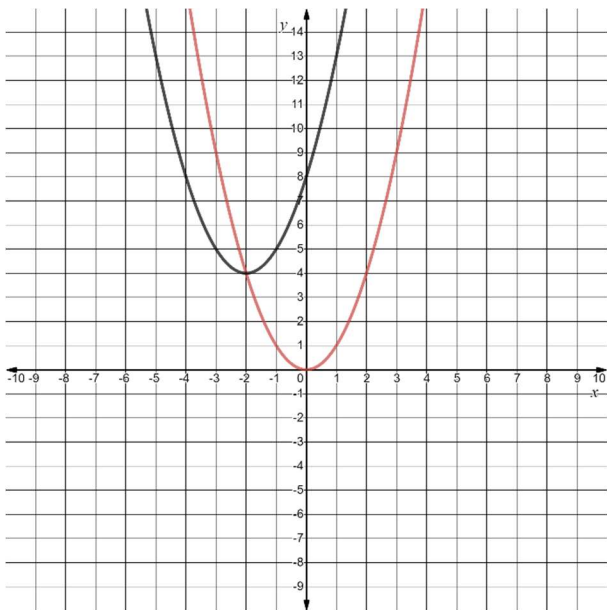g. $k(x) = (x - 2)^2$ h. $m(x) = (x + 3)^2$
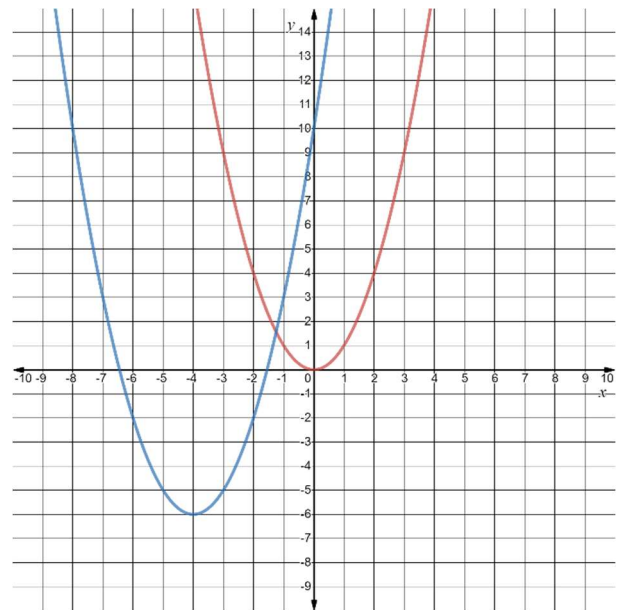
1. Graph $f(x) = (x-3)^2 + 1$

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. $f(x) = (x - 2)^2 + 1$

left 2, up 1

https://www.desmos.com/calculator/0cpw4u4dwk

b. $f(x) = (x - 7)^2 + 8$

left 7, up 8

https://www.desmos.com/calculator/zfmql6ju1e

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

left 3, up 2

https://www.desmos.com/calculator/sz17ftxqp1

d. $f(x) = (x - 5)^2 + 6$

left 5, up 6

https://www.desmos.com/calculator/uunquijvs3

e. $f(x) = (x - 1)^2 - 4$

left 1, down 4

https://www.desmos.com/calculator/wksgqimyim

f. $f(x) = (x - 6)^2 - 3$

left 6, down 3

https://www.desmos.com/calculator/yqhxa1g3tt

g. $f(x) = (x - 8)^2 - 5$

left 8, down 5

https://www.desmos.com/calculator/l9jywasgqf

h. $f(x) = (x - 4)^2 - 2$

left 4, down 2

https://www.desmos.com/calculator/opqudty5fp

i. $f(x) = (x + 2)^2 + 1$

right 2, up 1

https://www.desmos.com/calculator/ymz2hd6q1i

j. $f(x) = (x + 6)^2 + 3$

right 6, up 3

https://www.desmos.com/calculator/mri9v97vo6

k. $f(x) = (x + 9)^2 + 6$

right 9, up 6

https://www.desmos.com/calculator/mq0hotx7hb

l. $f(x) = (x + 3)^2 + 9$

right 3, up 9

https://www.desmos.com/calculator/9ariwujgny

m. $f(x) = (x + 8)^2 - 7$

right 8, down 7

https://www.desmos.com/calculator/mn0qqtgndx

n. $f(x) = (x + 1)^2 - 5$

right 1, down 5

https://www.desmos.com/calculator/bo7ml6nfz5

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

right 4, down 2

https://www.desmos.com/calculator/bo7ml6nfz5

p. $f(x) = (x + 5)^2 - 8$

right 5, down 8

https://www.desmos.com/calculator/yhdgzcdlg7