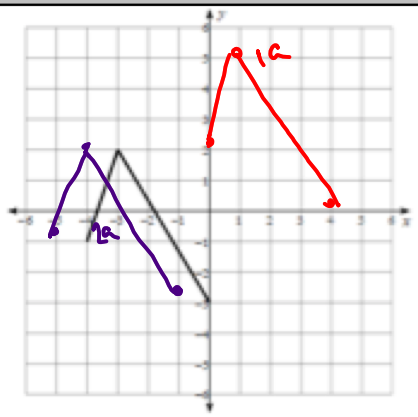
# 5.1 Transformations of Functions, Pt. 1

**PRACTICE**

Directions: a) Perform the translation on the given function (right on graph). B) Then, write g(x) in terms of f(x) after performing the given transformations.




1a) Translate the graph 4 units to the right and 3 units up.

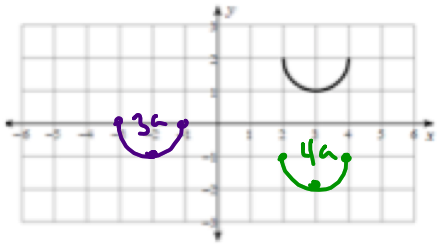
b) Write g(x) in terms of f(x).

$g(x) = f(x-4) + 3$

2a) Translate the graph 1 unit to the left.

b) Write g(x) in terms of f(x).

$g(x) = f(x+1)$




3a) Translate the graph 5 units to the left and 2 units down.

b) Write g(x) in terms of f(x).

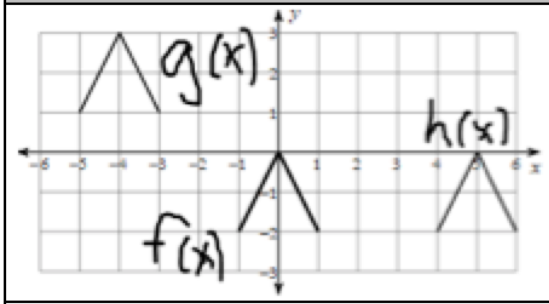
$g(x) = f(x+5) - 2$

4a) Translate the graph 3 units down.

b) Write g(x) in terms of f(x).

$g(x) = f(x) - 3$

Directions: a) Describe the shift from f(x) to the given function. b) Write g(x) in terms of f(x) after performing the given transformations.




5a) Describe the shift from f(x) to g(x)

It goes 4 units to the left, and 3 units up.

b) Write g(x) in terms of f(x).

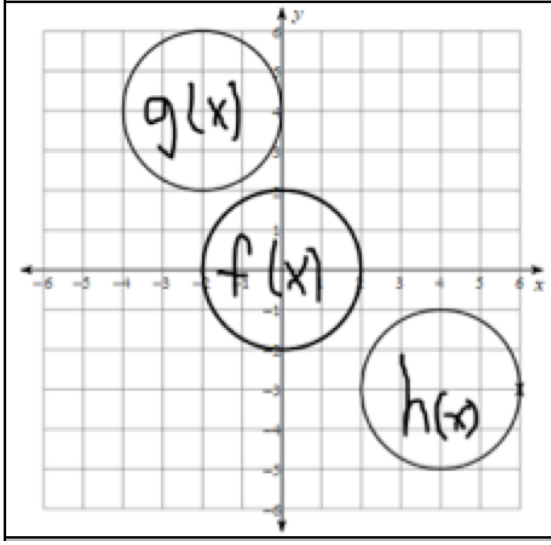
g(x) = f(x+4) + 3

6a) Describe the shift from f(x) to h(x)

It goes 5 units to the right.

b) Write h(x) in terms of f(x).

h(x) = f(x - 5)




7a) Describe the shift from f(x) to g(x)

It goes 2 units left and 4 units up.

b) Write g(x) in terms of f(x).

g(x) = f(x + 2) + 4

8a) Describe the shift from f(x) to g(x)

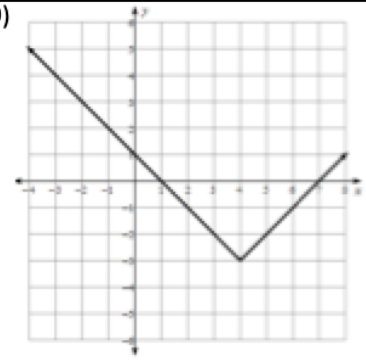
It goes 4 units to the right and 3 units down.

b) Write g(x) in terms of f(x).

h(x) = f(x - 4) - 3

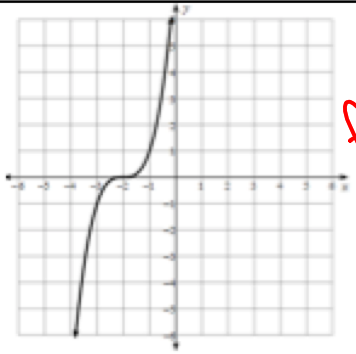
Directions: Write the equation of each graph.

9)



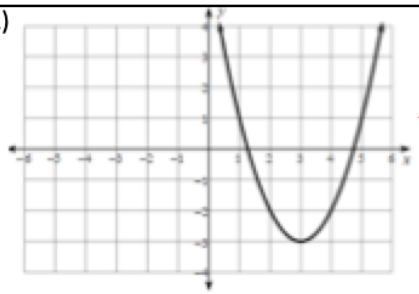
$f(x) = |x-4| - 3$

10)



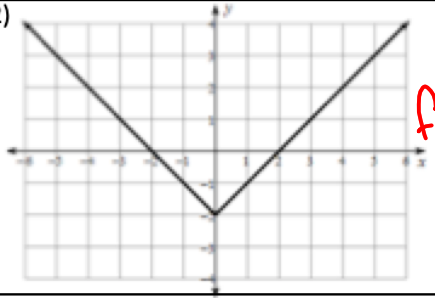
$f(x) = (x+2)^3$

11)



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

12)



$f(x) = |x| - 2$