

Your Name:

ID #:

### Worksheet: Transformations of Graphs

1. Explain how the graph of  $y = g(x)$  is obtained from the graph of  $y = f(x)$ .

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

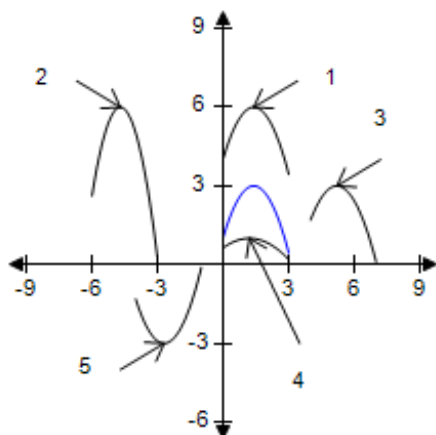
(b)  $g(x) = 7f(x) - 3$

(c)  $g(x) = 4f(x + 5) - 3$

(d)  $f(x) = x^2$ ,  $g(x) = x^2 + 2$

(e)  $f(x) = \sqrt{x}$ ,  $g(x) = \frac{1}{2}\sqrt{x-5}$

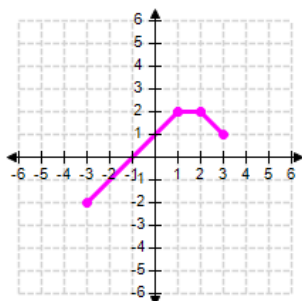
2. The graph of  $y = h(r)$  is given in the blue graph. Determine the number of the graph of the function  $2h(r + 6)$ .



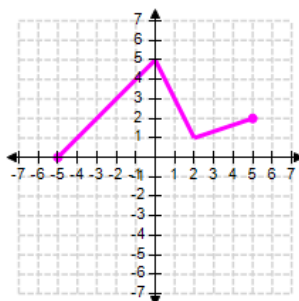
- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

3. The graph of  $f(x)$  is given in pink, sketch the graph of the function  $g(x)$  in the same coordinates.

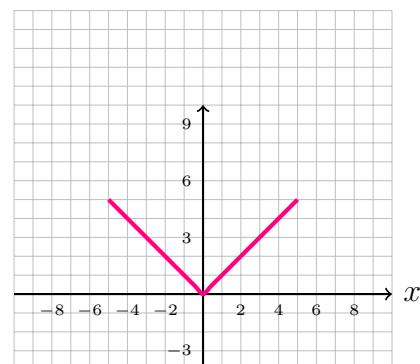
1).  $g(x) = f(x) - 2$



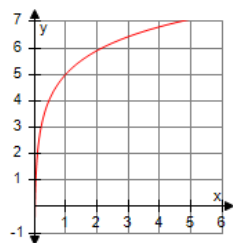
2).  $g(x) = -f(x) + 3$



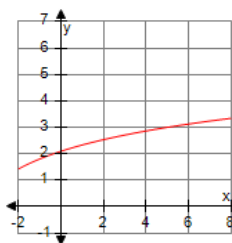
3).  $g(x) = 2f(x + 3) + 2$



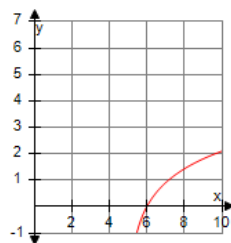
4. Identify the graph of  $g(x) = 3 \log x + 5$



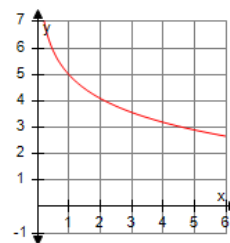
(A)



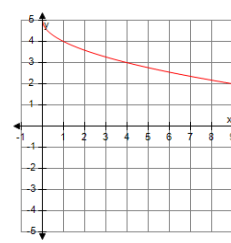
(B)



(C)

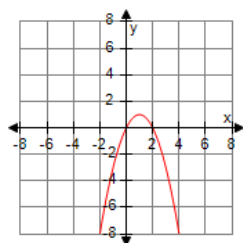


(D)

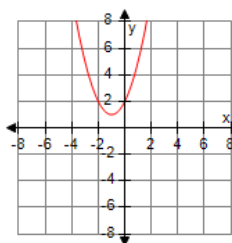


(E)

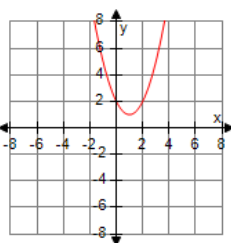
5. Which one of the following graphs illustrate the function  $f(x) = -(x + 1)^2 + 1$



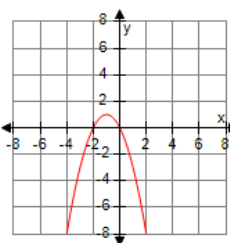
(A)



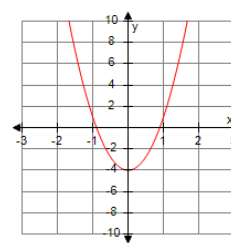
(B)



(C)



(D)



(E)

6. Which one of the following functions translates the graph of  $f(x) = 4^x$  to a new graph  $g(x)$  with a reflection about the  $x$ -axis, a vertical stretch by a factor of 5, and a horizontal shift left 8 units.

A.  $f(x) = -5 \cdot 4^{x-8}$

C.  $f(x) = -5 \cdot 4^{x+8}$

D.  $f(x) = 5 \cdot 4^{x-8}$

B.  $f(x) = -5 \cdot 4^x + 8$