Math 12 COMBINING TRANSFORMATIONS QUIZ Name: _____
Date: _____

1. If the graph of the function y = $\sqrt{x}$ is horizontally expanded by a factor of 3 and then translated 2 units to the right, determine the equation of this new function.

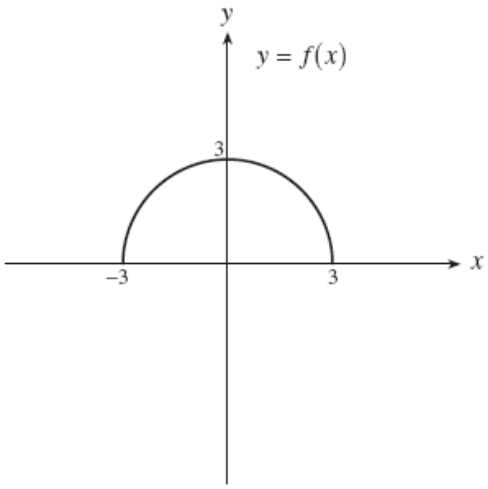
   A. y = $\sqrt{3(x-2)}$

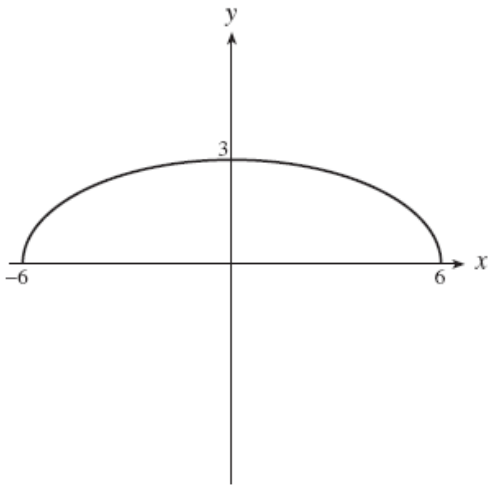
   B. y = $\sqrt{\frac{1}{3}(x-2)}$

   C. y = $\sqrt{3x-2}$

   D. y = $\sqrt{\frac{1}{3}x-2}$

2. The function y=f(x) is graphed to the left below. Determine the equation of the function shown to the right.





   A. $y = f\left(\frac{1}{2}x\right)$

   B. $y = f(2x)$

   C. $y = \frac{1}{2}f(x)$

   D. $y = 2f(x)$

3. Determine the equation that will cause the graph of y = f(x) to expand vertically by a factor of 4 and reflect in the y – axis.

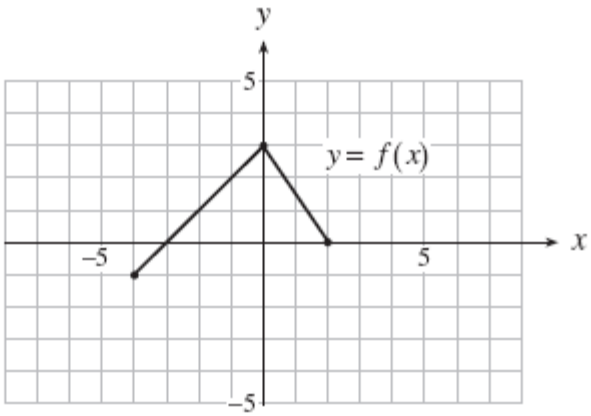
   (A) y = -4f(x)

   (B) y = $\frac{-1}{4}$ f(x)

   (C) y = $\frac{1}{4}$ f(-x)

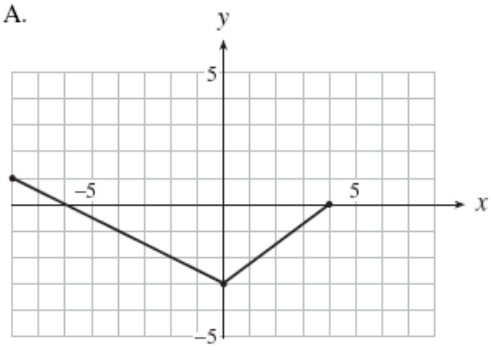
   (D) y = 4f(-x)

4. The graph of the function y = f(x) is shown below.

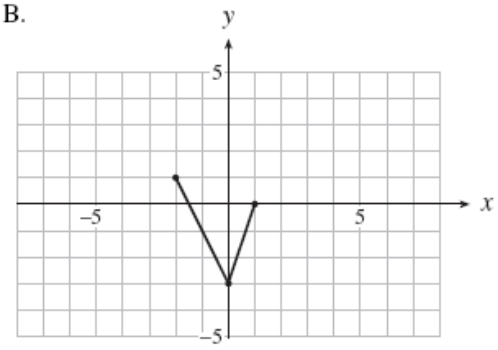


Which of the following is the graph of $y = -f\left(\frac{x}{2}\right)$?

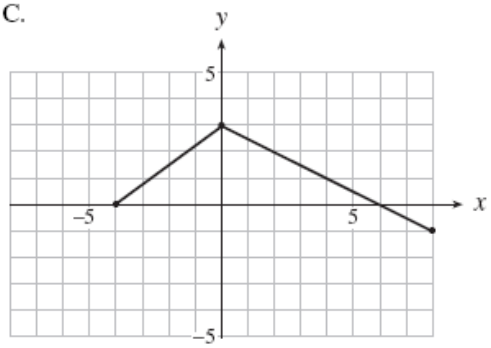
A.



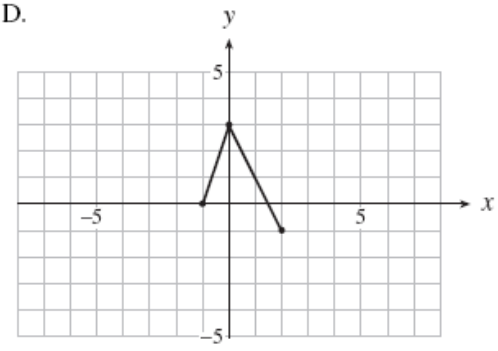
B.



C.

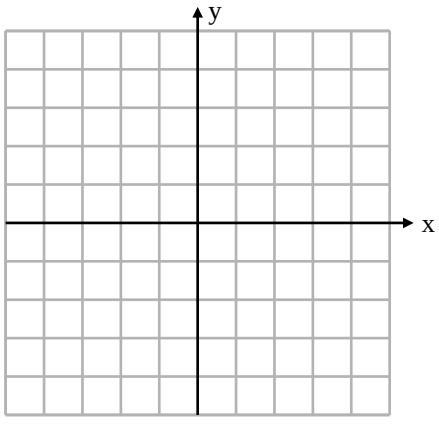


D.

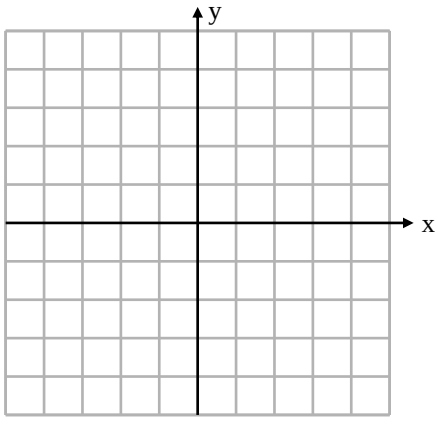


5. Graph the following functions

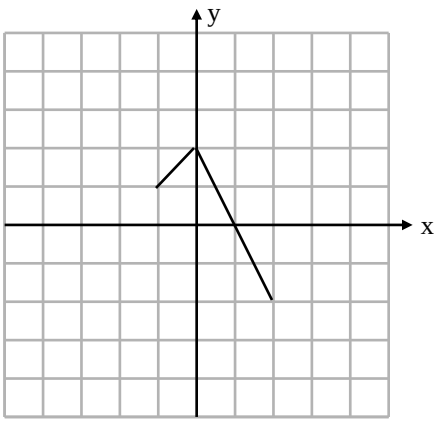
(a) $y = 2\sqrt{-(x-1)} - 3$



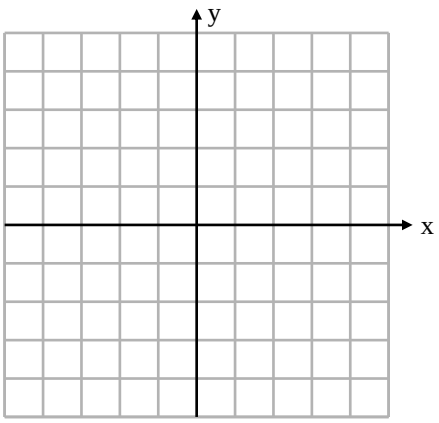
(b) $y = -|2x+4|+3$



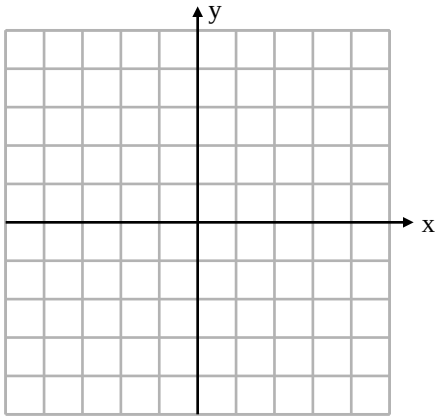
6. The function y =f(x) is graphed. Graph each of the following:



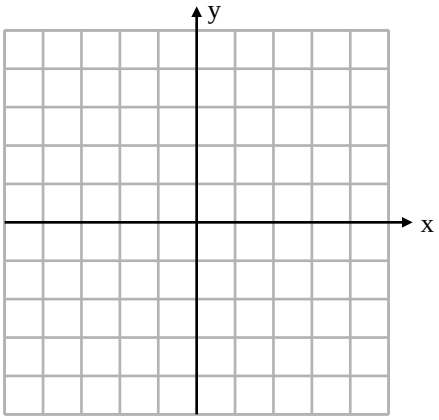
a) y = f(-x)



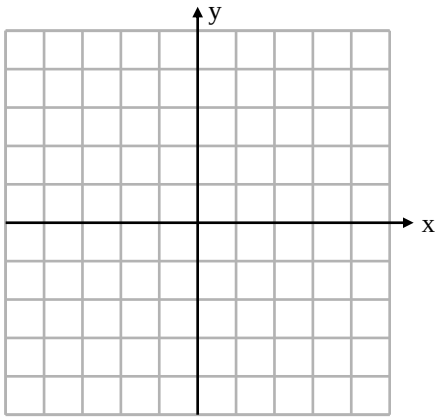
b) y = f(2x)



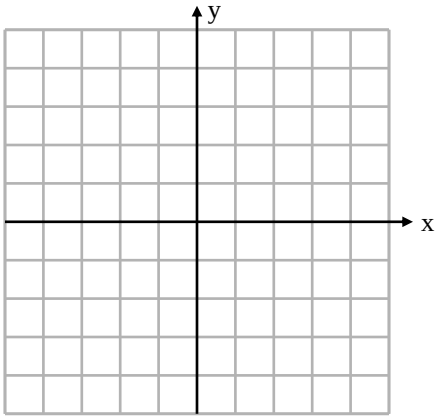
c) y = -2f(x)



d) y = $\frac{3}{2} f(\frac{1}{2}x)$



e) y = -f($\frac{1}{3}$(x+1))+2



7. If the point (3, -2) is on the graph of y=h(x), then which point must be on the graphs for each of the following functions?

a) y = 2h(-x) a) _____
b) y = -h(2x) b) _____
c) y = ($\frac{1}{2}$(x – 2)) + 3 c) _____
d) y = -h(-x) – 1 d) _____