PC12 Transformations Extra Practice – Part I

Name: _____

1. $y = \frac{1}{3}f(x+2) - 2$. Describe this transformation.

2. $f(x) = x^2$. $g(x) = -2f(x+1)$.
   a. Describe this transformation.

   b. Actual equation of $g(x)$?

3. $f(x) = \sqrt{x}$. If possible, describe the following transformation: $y = f\left(-\frac{x}{3}\right)$.

4. Describe the following transformation: $y = \frac{3}{2}f(4x+8) - 2$.

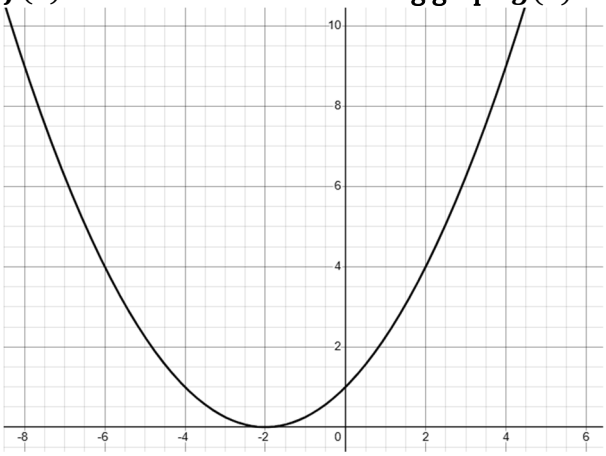
5. Describe the following transformation: $y = f\left(\frac{3}{4}x - 3\right)$.

6. $f(x) = x^2 + 4x$. $g(x) = f(x-3)$.
   a. Sketch $y = g(x)$.

   b. Evaluate $g(-1)$.

7. $f(x) = x^2$. $g(x) = 9f(x)$. $h(x) = g(x) = f(kx)$. Find k.

8. $f(x) = x^2$. Describe the following graph $g(x)$ as a transformation of $f(x)$:

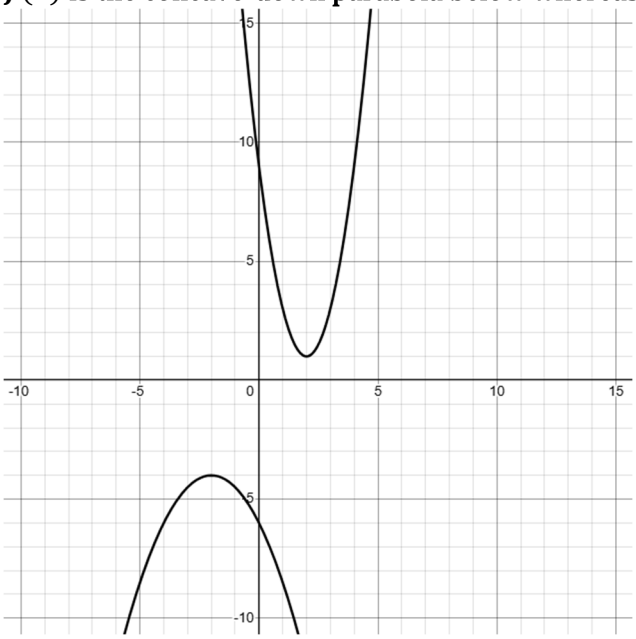


9. $f(x)$ contains the point $(-6, 4)$. $g(x) = -3f(x + 1) - 2$. What point must be on $g(x)$?

10. Describe the following transformation: $y = f\left(-\frac{3}{4}x + 1\right)$.

11. $f(x) = x^2 - 3x$. $g(x) = 3f(x + 2) + f(x) - 1$.
What is the actual equation of $g(x)$?

12. $f(x)$ is the concave-down parabola below whereas $g(x)$ is the concave-up parabola.



a. Find the equation of $f(x)$.

b. Find the equation of $g(x)$.

c. Describe the transformation from $f(x)$ to $g(x)$.

13. If possible:

a. Sketch $y = \sqrt{3}$

b. Evaluate $\sqrt{\frac{4}{25}}$

c. Evaluate $\sqrt[5]{-32}$

d. Evaluate $\sqrt{-4}$

e. If possible, sketch $y = \sqrt[3]{x}$

14. $f(x) = x^3$. Sketch $y = -2f(x + 2)$ and label 3 points.