PC12 Transformations Assignment Part I

Name: _____

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

2. $f(x) = x^2$. $g(x) = 3f(x-2)$.
   a. Describe this transformation.

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

3. $f(x) = \sqrt{x}$. If possible, describe the following transformation: $y = f\left(-\frac{x}{2}\right)$.

4. Describe the following transformation: $y = \frac{2}{3}f(2x-6)+1$.

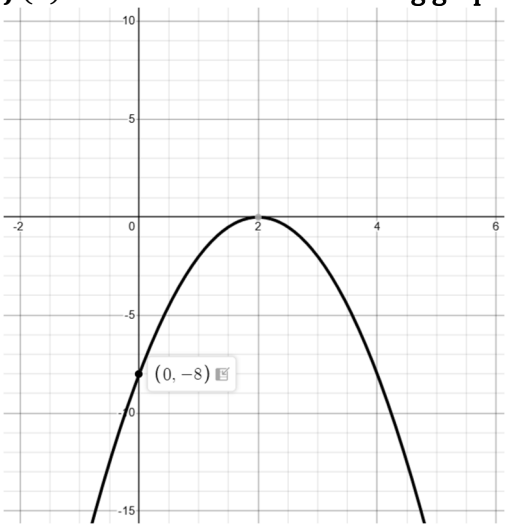
5. Describe the following transformation: $y = f\left(\frac{2}{3}x+2\right)$.

6. $f(x) = x^2 - 3x$. $g(x) = f(x+5)$.
   a. Sketch $y = g(x)$.

   b. Evaluate $g(2)$.

7. $f(x) = x^2$. $g(x) = 16f(x)$. $h(x) = g(x) = f(bx)$. Find b.

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

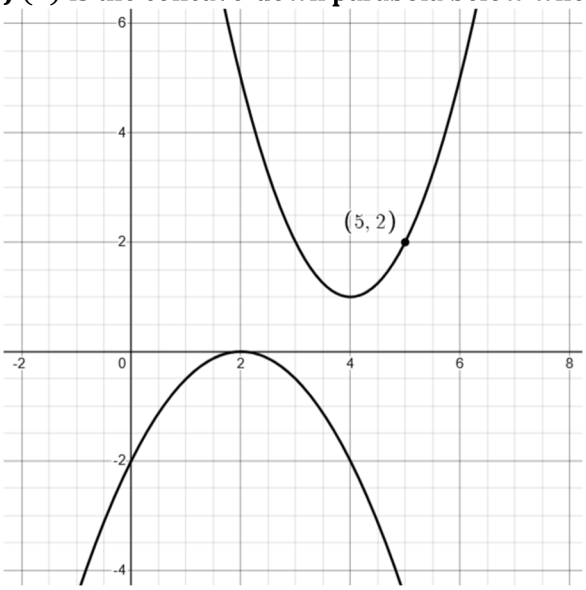


9. $f(x)$ contains the point $(2, -3)$. $g(x) = -2f(x-2) + 1$. What point must be on $g(x)$?

10. Describe the following transformation: $y = f\left(-\frac{2}{3}x + 6\right)$.

11. $f(x) = x^2 + 2x$. $g(x) = 2f(x-1) - f(x) + 1$.
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 $y = \sqrt{2}$

b. Evaluate $\sqrt{\frac{9}{25}}$

c. Evaluate $\sqrt[3]{-8}$

d. Evaluate $\sqrt{-9}$

e. Sketch $y = \sqrt{-x}$

14. $f(x) = x^3$. Sketch $y = -2f(x-1)$ and label 3 points.