

Name: _____

Date: _____

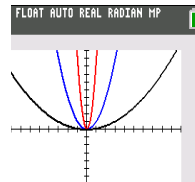
11.2 HOMEWORK: Scaling (Stretching and Compressing)

Algebra 1

1. Let $f(x) = x^2$, $g(x) = (3x)^2$, and $h(x) = \left(\frac{1}{3}x\right)^2$, where x can be any real number.

- a. Label each graph with the appropriate equation.
- b. Describe the transformation that transforms $f(x)$ into $g(x)$.

- c. Describe the transformation that transforms $f(x)$ into $h(x)$.



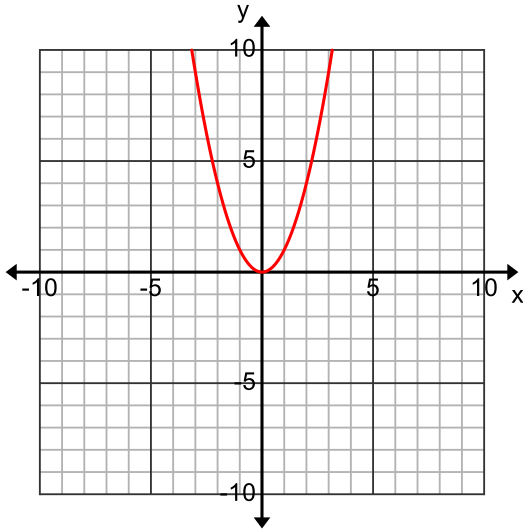
2. Write an equation for the new function whose transformation is described, and then describe its graph.

- a. If $f(x) = x^2$, then $g(x) = 3f(x)$. What is the equation for $g(x)$, and how does its graph compare to $f(x)$?
- b. If $f(x) = x^2$, then $h(x) = \frac{1}{3}f(x) - 5$. What is the equation for $h(x)$, and how does its graph compare to $f(x)$?
- c. If $f(x) = x^2$, then $j(x) = 4f(x - 5) + 1$. What is the equation for $j(x)$, and how does its graph compare to $f(x)$?

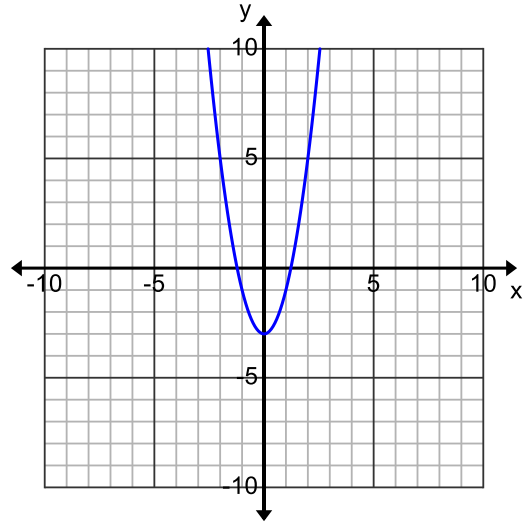
3. Match the equation with the correct graph.

$$f(x) = 2x^2 - 3 \quad g(x) = x^2 \quad h(x) = \frac{1}{3}(x + 2)^2 - 6 \quad j(x) = \left(\frac{1}{2}x\right)^2 + 1$$

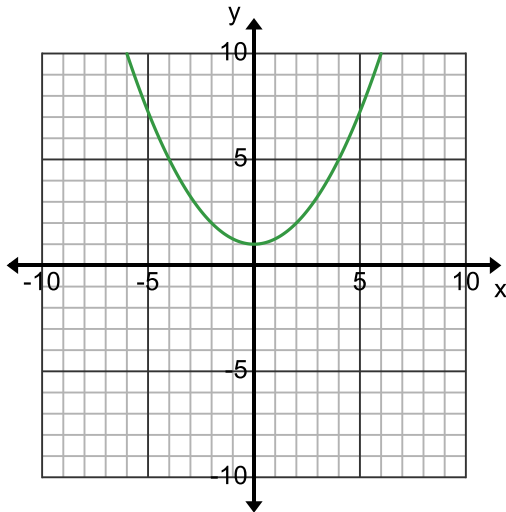
a.



b.



c.



d.

