

Name \_\_\_\_\_

Transformations of Functions 2: Dilations

Date \_\_\_\_\_

Check-in Activity

**For the following functions, describe in words the dilations from the parent function**

**$f(x) = |x|$  to the new function  $g(x)$ .**

1.  $g(x) = 5|x|$

2.  $g(x) = \left|\frac{1}{3}x\right|$

**For the following functions, describe in words the dilations from the parent function**

**$f(x) = \sqrt{9 - x^2}$  to the new function  $g(x)$ .**

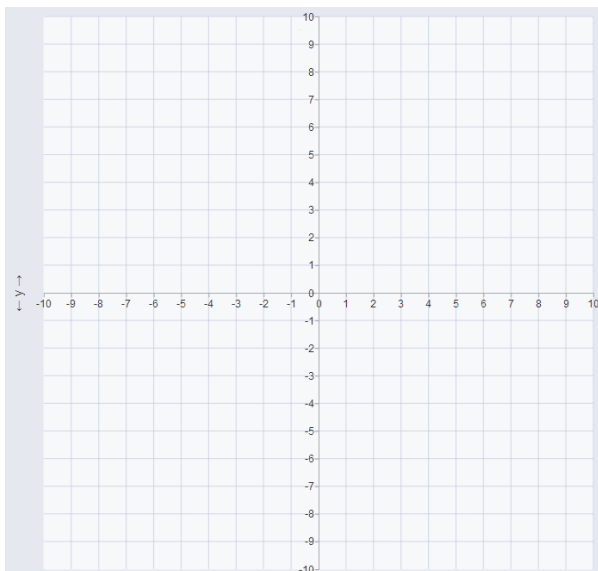
3.  $f(x) = 2\sqrt{9 - (3x)^2}$

4.  $f(x) = \frac{1}{5}\sqrt{9 - \left(\frac{2}{3}x\right)^2}$

**For the following functions, graph the parent function  $f(x)$  and the dilated function  $g(x)$  on the same axes.**

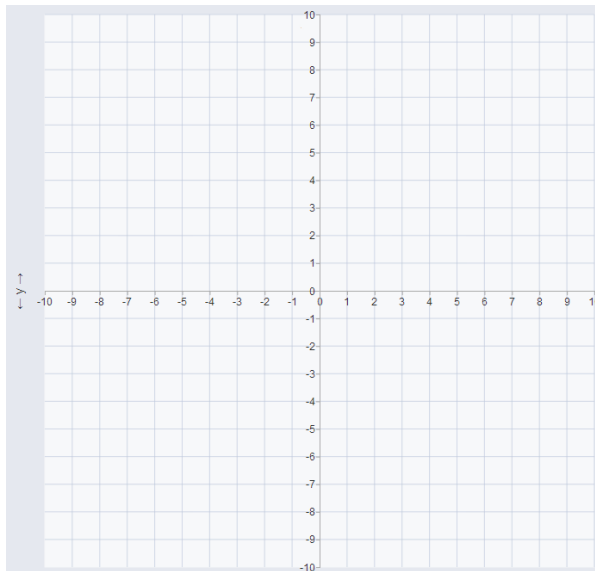
5.

$$f(x) = x^2 \quad g(x) = \left(\frac{1}{4}x\right)^2$$



6.

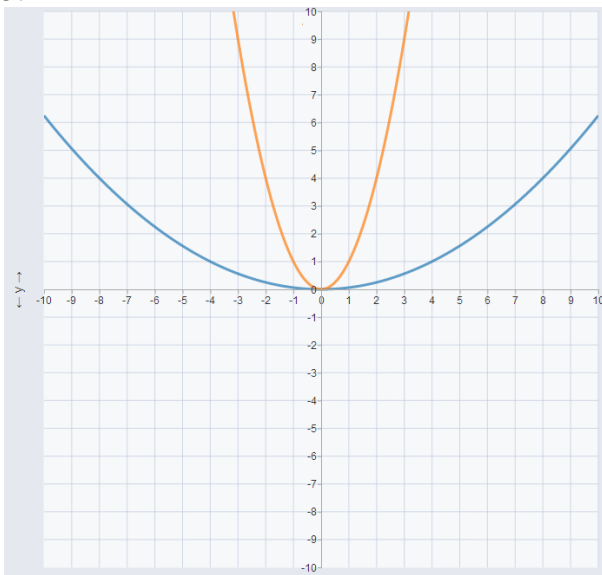
$$f(x) = \sqrt{x} \quad g(x) = 2\sqrt{x}$$



Answer Key:

1. Vertical stretch by a factor of 5.
2. Horizontal stretch by a factor of 3.
3. Vertical Stretch by a factor of 2 and horizontal compression by a factor of 3.
4. Vertical compression by a factor of  $\frac{1}{5}$  and horizontal stretch by a factor of  $\frac{3}{2}$ .

5.



6.

