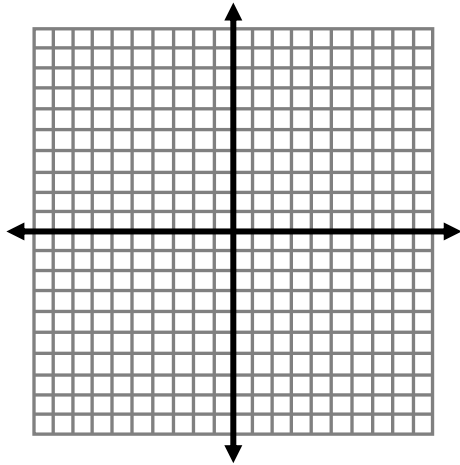


**Using the graph of Square Root function as a guide, describe the transformation and graph each function. Then, identify the domain and range in INTERVAL NOTATION.**

1)  $f(x) = \sqrt{x-2}$

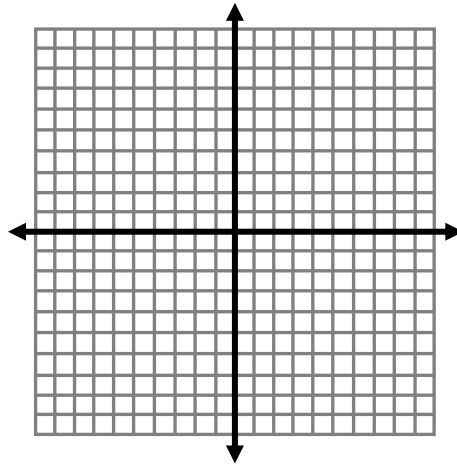


Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Transformation:

2)  $f(x) = 3\sqrt{x}$

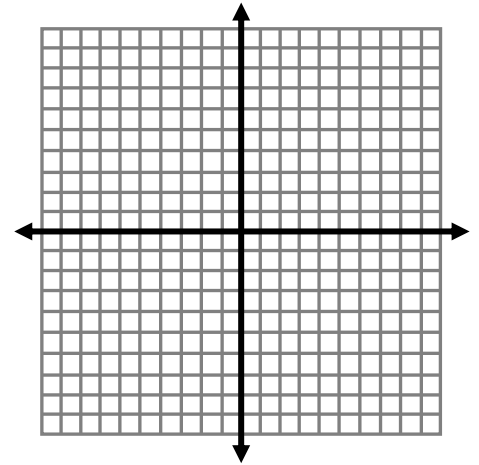


Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Transformation:

3)  $f(x) = \sqrt{3(x+5)}$

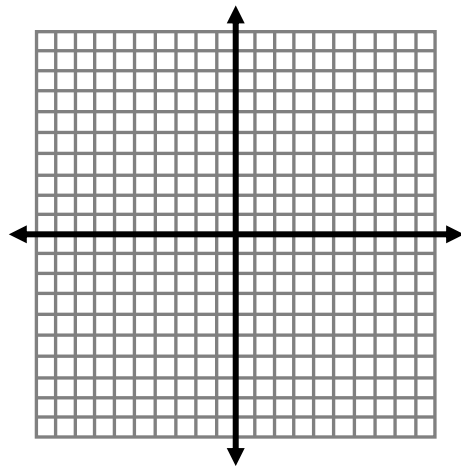


Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Transformation:

4)  $f(x) = \sqrt{x+4} - 1$

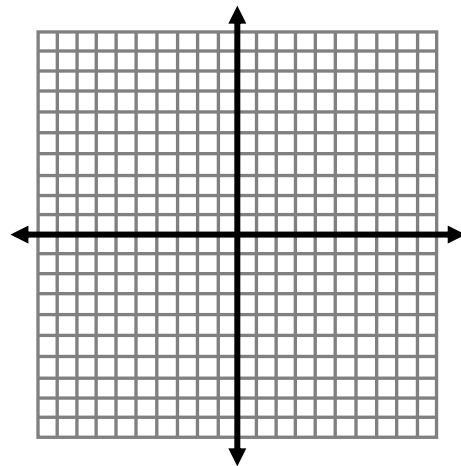


Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Transformation:

5)  $f(x) = 2\sqrt{x+1} - 3$



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Transformation:

**Use the description to write the square-root function,  $g$ .**

6) The parent function is compressed vertically by a factor of  $1/3$  and translated 3 units to the left.

7) The parent function is reflected across the  $x$ -axis and translated 1 unit to the left and 4 units down.

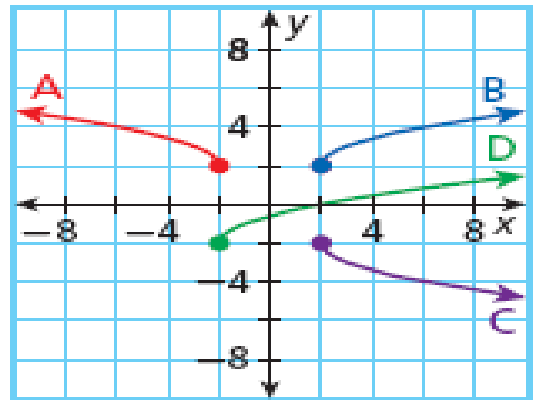
**Match each function to its graph.**

8)  $f(x) = \sqrt{x+2} - 2$

9)  $f(x) = \sqrt{x-2} + 2$

10)  $f(x) = \sqrt{-x-2} + 2$

11)  $f(x) = -\sqrt{x-2} - 2$



12) The speed in miles per hour of a tsunami can be modeled by the function  $s(d) = 3.86\sqrt{d}$ , where  $d$  is the average depth in feet of the water over the tsunami travels. Predict the speed of a tsunami over water with a depth of 1500 feet.