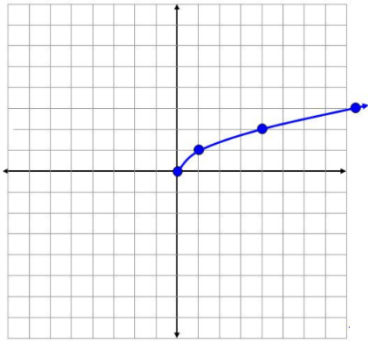


**Secondary Math III**  
**Graphing Radical/Absolute Value Functions**  
 Assignment 8.3

Name: \_\_\_\_\_  
 Period: \_\_\_\_\_

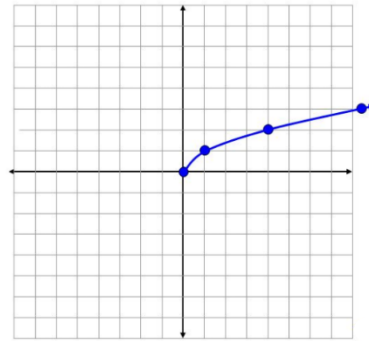
Sketch the graph of the transformation of  $f(x) = \sqrt{x}$  as described in each problem. Write the equation to describe each new function beside each graph. The graph of  $f(x) = \sqrt{x}$  is shown on each set of coordinate axes.

1. Translate the graph up 2 units.



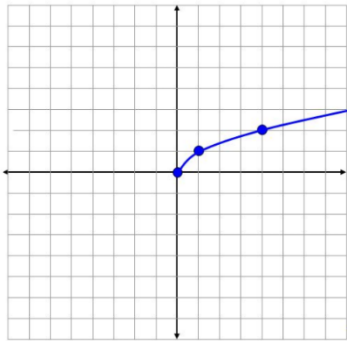
New Function:

2. Translate the graph down 6 units.



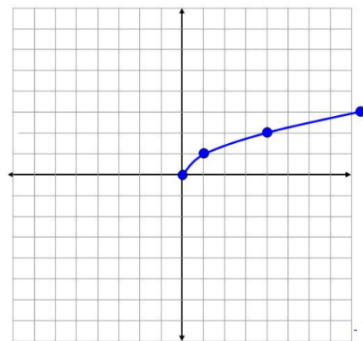
New Function:

3. Translate the graph to the left 4 units.



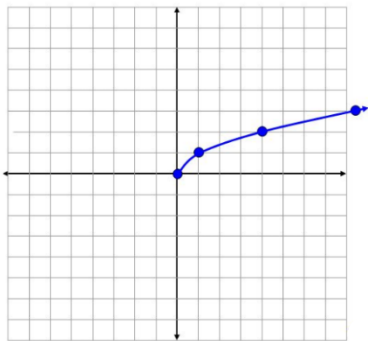
New Function:

4. Translate the graph to the right 2 units.



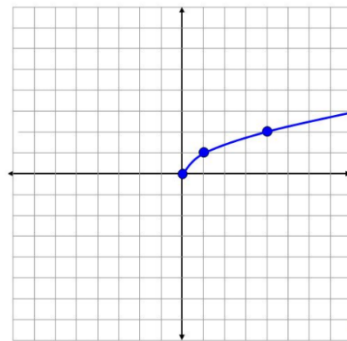
New Function:

5. Stretch the graph vertically by a factor of 2.



New Function:

6. Reflect the graph over the x-axis.



New Function:

Describe the transformations from the parent graph of  $f(x) = \sqrt{x}$ .

7.  $g(x) = \sqrt{x+2} + 5$

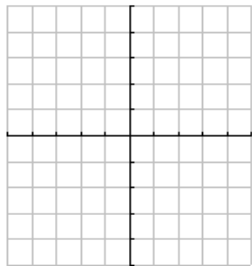
8.  $g(x) = \frac{1}{3}\sqrt{-x}$

9.  $g(x) = -\sqrt{3x}$

10.  $g(x) = 5\sqrt{\frac{x}{2}}$

**Describe the transformations and graph the function. State the domain and range of the function.**

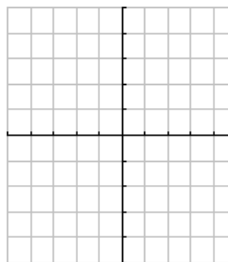
11.  $f(x) = |x-1| - 3$



Transformations:

D:            R:

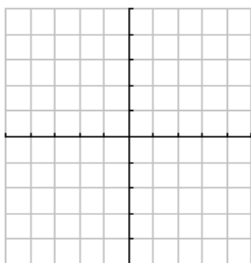
12.  $f(x) = -x^3 + 2$



Transformations:

D:            R:

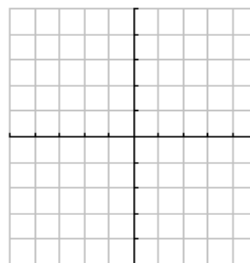
13.  $g(x) = -2|x| + 3$



Transformations:

D:            R:

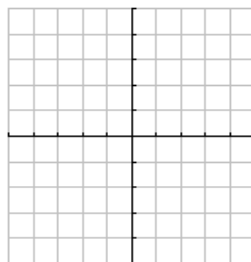
14.  $h(x) = -\sqrt{x+4}$



Transformations:

D:            R:

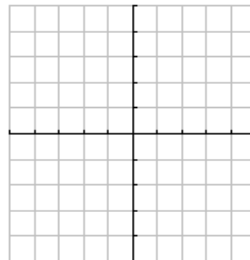
15.  $f(x) = \sqrt[3]{x} - 2$



Transformations:

D:            R:

16.  $g(x) = \frac{1}{2}(x-2)^2$



Transformations:

D:            R:

**Given  $f(x) = 2x - 5$  and  $g(x) = -2x + 5$ , find the following:**

17.  $(f - g)(x)$

18.  $g(f(2))$

19.  $(f \cdot g)(x)$

20.  $f(g(x))$

21.  $g(f(x))$

22. Are  $f$  and  $g$  inverse functions? Why or why not?