

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

2.  $g(x) = \sqrt{\frac{1}{2}x} + 1$

3.  $g(x) = -5\sqrt{x+1} - 3$

- V. Flip
- V. Stretch by 5
- Shift left by 1
- Shift down by 3

Describe the Domain and Range of each function

7.  $g(x) = 3\sqrt{x+4} + 3$

8.  $g(x) = \sqrt{-5(x+1)} + 2$

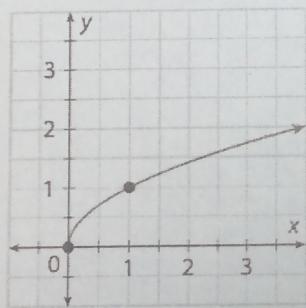
H. Flip

D:  $(-\infty, -1]$   
R:  $[2, \infty)$

Plot the transformed function  $g(x)$  on the grid with the parent function,  $f(x) = \sqrt{x}$ .

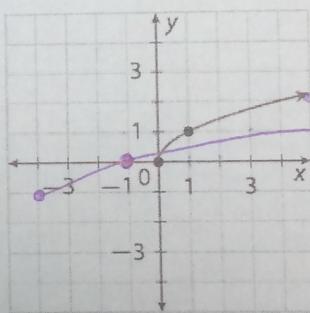
Describe the domain and range of each function using set notation.

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



11.  $g(x) = \sqrt{\frac{1}{3}(x+4)} - 1$

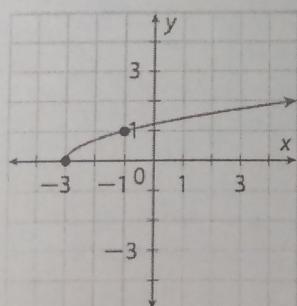
H. Stretch by 3  
Shift left 4  
Shift down 1



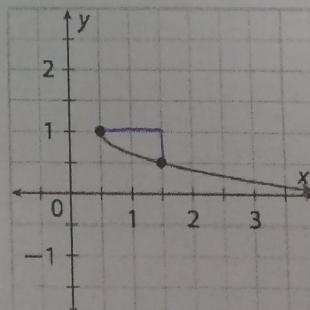
Domain:  
 $(-4, \infty)$   
Range:  
 $[-1, \infty)$

Write a function to represent the following graphs

15.  $g(x) = \sqrt{\frac{1}{b}(x-h)} + k$



17.  $g(x) = a\sqrt{x-h} + k$



V. Flip  
V. Compress by  $\frac{1}{2}$   
Shift Right  $\frac{1}{2}$   
Shift Up 1

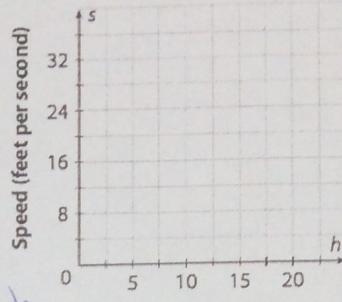
$g(x) = -\frac{1}{2}\sqrt{x-1/2} + 1$

19. The speed,  $s$ , in feet per second, of an object dropped from a height,  $h$ , in feet, is given by the formula  $s(h) = \sqrt{64h}$ . Evaluate the function for heights of 0 feet to 25 feet by calculating points every 5 feet.

Hint:

X	Y
0	0
5	8
10	16
15	24
20	32
25	40

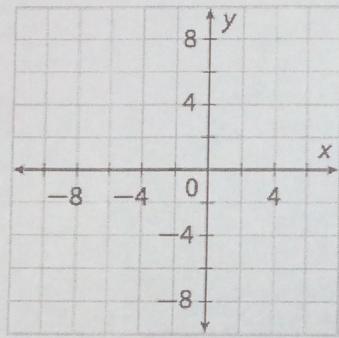
Plug in to  $\sqrt{64x}$



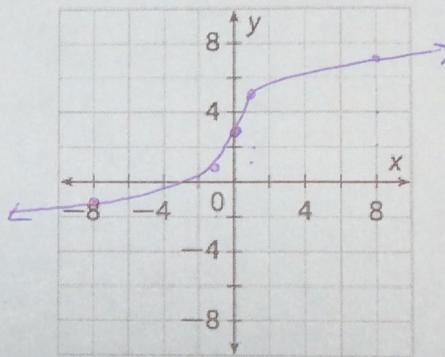
graph

Graph the cube root functions.

9.  $g(x) = 3\sqrt[3]{x+4}$



10.  $g(x) = 2\sqrt[3]{x} + 3$

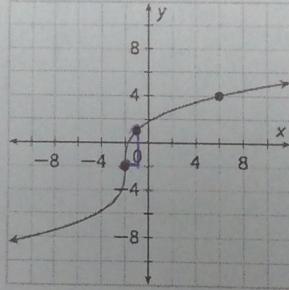


V. stretch by 2  
shift up 3

11. Write an equation to represent the following function

V. stretch by 3  
shift left 2 down 2

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



21. Describe the translation(s) used to get  $g(x) = \sqrt[3]{x-9} + 12$  from  $f(x) = \sqrt[3]{x}$ . Select all that apply.

- A. translated 9 units right
- B. translated 9 units left
- C. translated 9 units up
- D. translated 9 units down
- E. translated 12 units right
- F. translated 12 units left
- G. translated 12 units up
- H. translated 12 units down