

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

2. $g(x) = \sqrt{\frac{1}{2}x} + 1$
horiz. stretch by 2
up 1

3. $g(x) = -5\sqrt{x+1} - 3$
vertical reflection
v. stretch by 5
left 1
down 3

Describe the Domain and Range of each function

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

D: $[-4, \infty)$
R: $[3, \infty)$

8. $g(x) = \sqrt{5x+10} - 2$

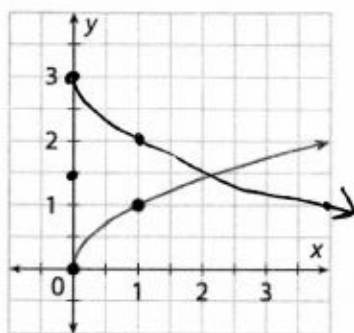
D: $[-2, \infty)$
R: $[-2, \infty)$

$5x+10 \geq 0$
 $5x \geq -10$
 $x \geq -2$

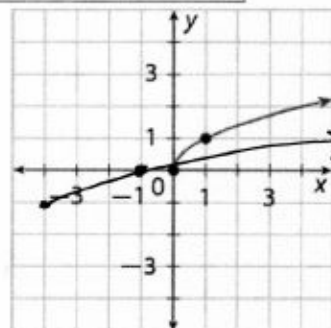
Plot the transformed function $g(x)$ on the grid with the parent function, $f(x) = \sqrt{x}$. Describe the domain and range of each function using set notation.

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

D: $[0, \infty)$
R: $(-\infty, 3]$



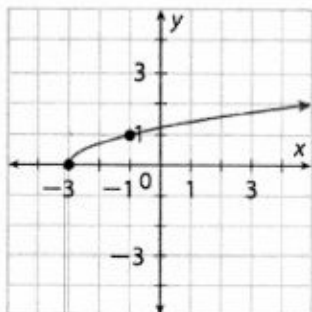
11. $f(x) = \sqrt{3x+12} - 1$



D: $[-4, \infty)$
R: $[-1, \infty)$

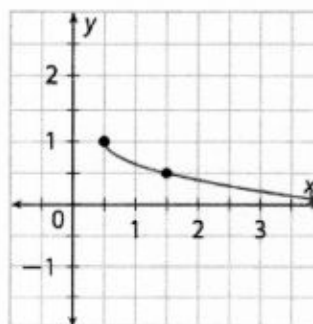
Write a function to represent the following graphs

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



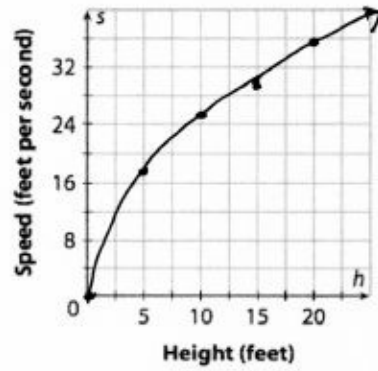
$f(x) = \sqrt{\frac{1}{2}(x+3)}$

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



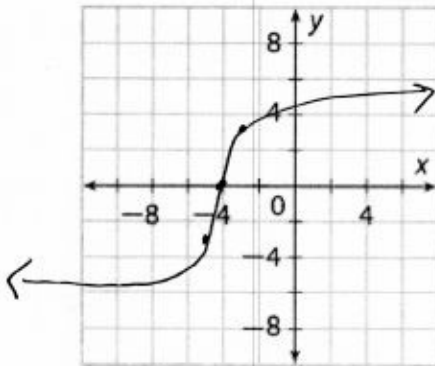
$f(x) = -\frac{1}{2}\sqrt{x-\frac{1}{2}} + 1$

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.

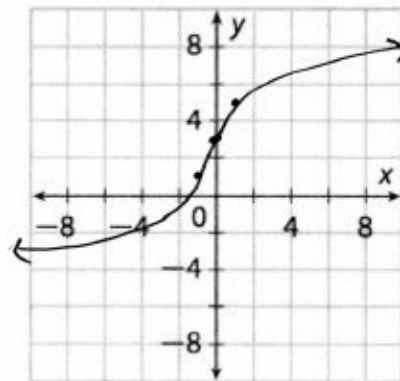


Graph the cube root functions.

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

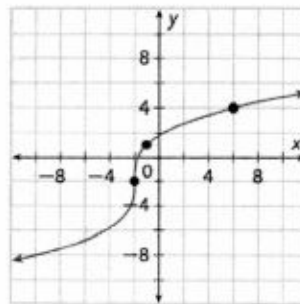


10. $g(x) = 2\sqrt[3]{x} + 3$



11. Write an equation to represent the following function

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



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

E. translated 12 units right

B. translated 9 units left

F. translated 12 units left

C. translated 9 units up

G. translated 12 units up

D. translated 9 units down

H. translated 12 units down

Review

Perform the following operations

$$\begin{aligned} 1. & (-2 + \sqrt{-49}) + (3 - \sqrt{-81}) \\ & (-2 + 7i) + (3 - 9i) \\ & \boxed{1 - 2i} \end{aligned}$$

$$\begin{aligned} 2. & (7 - 2i)^2 (7 - 2i) \\ & 49 - \cancel{28} 14i - 14i + \cancel{4i^2} - 4 \\ & \boxed{45 - 28i} \end{aligned}$$

State the complex conjugate of the following

3. $-3 - 2i$

$-3 + 2i$

4. $-6i$

$6i$

5. $1 + 5i$

$1 - 5i$