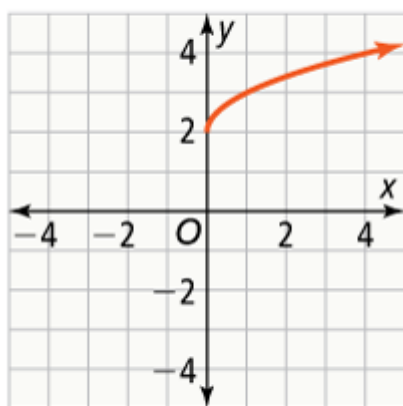


13. Helena did not include the stretching factor of 2. The correct function is $f(x) = 2\sqrt{x-1}$.
17. $f(x) = \sqrt{x} + 2$

Make a table of values and graph.

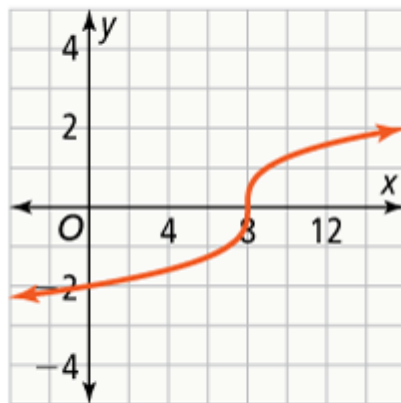
x	0	1	4
y	2	3	4



For a square root function, the radicand cannot be negative, so the domain of the function is $\{x|x \geq 0\}$. The solution to a square root function always returns a positive value or 0, so the range is $\{y|y \geq 2\}$. As x increases, y increases, so the function is increasing.

19. $f(x) = \sqrt[3]{x-8}$

x	7	8	9
y	-1	0	1



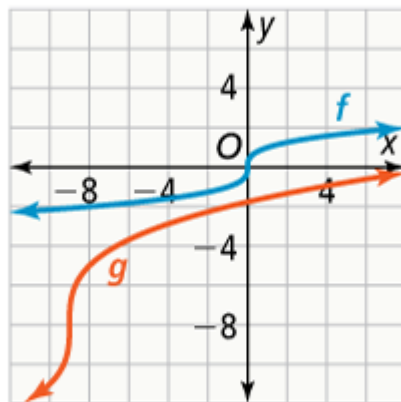
There are no restrictions on the radicand of a cube root function, so the domain and range of the function is all real numbers. The function is increasing over the entire domain.

21. $f(x) = \sqrt[3]{x}$

x	-1	0	1
y	-1	0	1

$g(x) = 3\sqrt[3]{x+9} - 8$

x	-10	-9	-8	-7
y	-11	-8	-5	-2



The graph of f is being stretched vertically by a factor of 3 and translated 9 units to the left, and 8 units down to create the graph of g . The domain has been translated horizontally by 9 units to $\{x|x \geq -9\}$, and the range has been translated vertically by -8 units to $\{y|y \geq -8\}$.

$$\begin{aligned}
 23. \quad f(x) &= \sqrt{25x + 75} \\
 &= \sqrt{25(x + 3)} \\
 &= \sqrt{25} \cdot \sqrt{x + 3} \\
 &= 5\sqrt{x + 3}
 \end{aligned}$$

$f(x)$ is a vertical stretch of 5 and a translation 3 units to the left.

$$\begin{aligned}
 25. \quad f(x) &= \sqrt{4x - 24} - 6 \\
 &= \sqrt{4(x - 6)} - 6 \\
 &= \sqrt{4} \cdot \sqrt{x - 6} - 6 \\
 &= 2\sqrt{x - 6} - 6
 \end{aligned}$$

$f(x)$ is a vertical stretch of 2 and a translation 6 units to the right and 6 units down.

26. The parent function is translated 1 unit to the right and 1 unit up.

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

27. The parent function is translated 2 units to the left 3 units up.

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

32. The cube root functions have domains and ranges that are all real numbers. Choice A has a domain $x \geq 1$ and range $y \geq 2$. Choice B has a domain $x \geq -1$ and range $y \geq -2$.