Graph $y = \sqrt{x+4} - 3$

Parent Function $y = \sqrt{x}$

Domain $[-4, +\infty)$

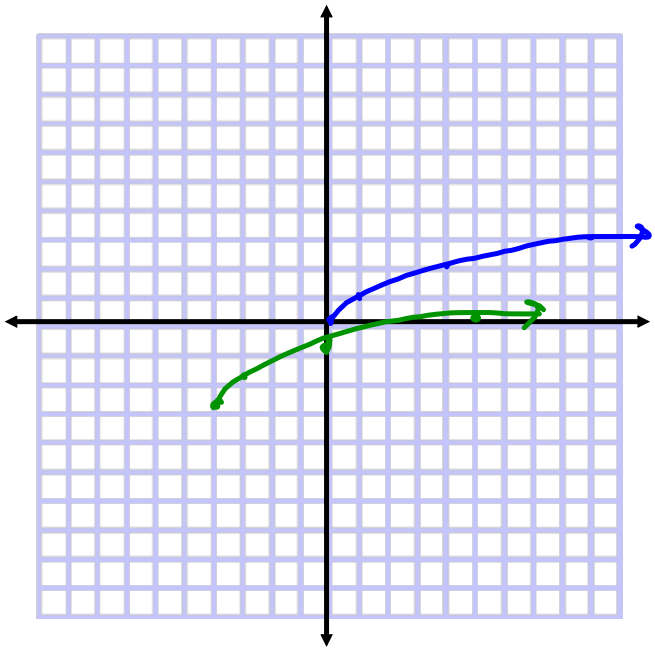
Range $[-3, +\infty)$

Horizontal Shift Left 4

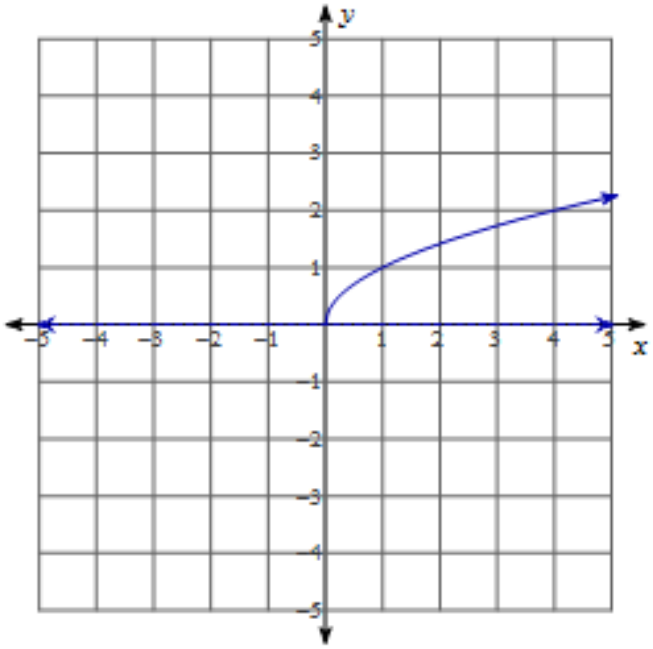
Vertical Shift Down 3

Vertical Stretch None

x	y
0	0
1	1
4	2
9	3



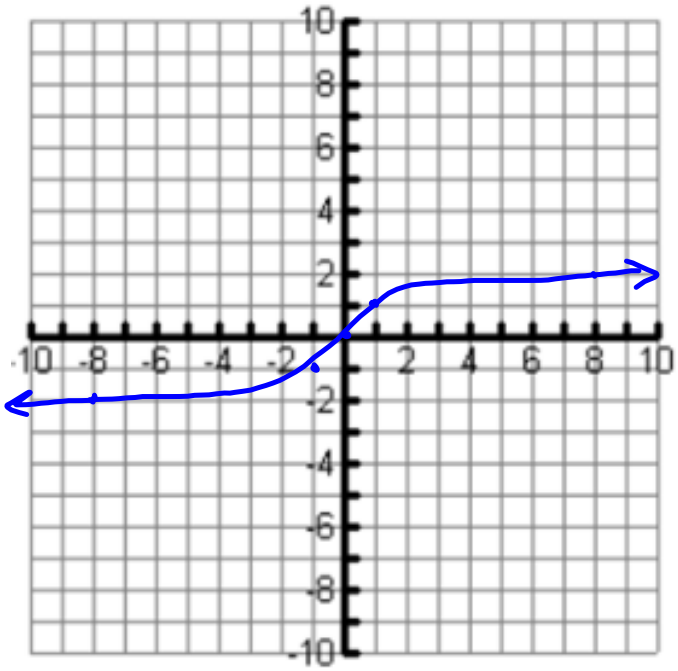
Parent Function



Who is this?

Cubic Root Functions

Parent function: $y = \sqrt[3]{x}$

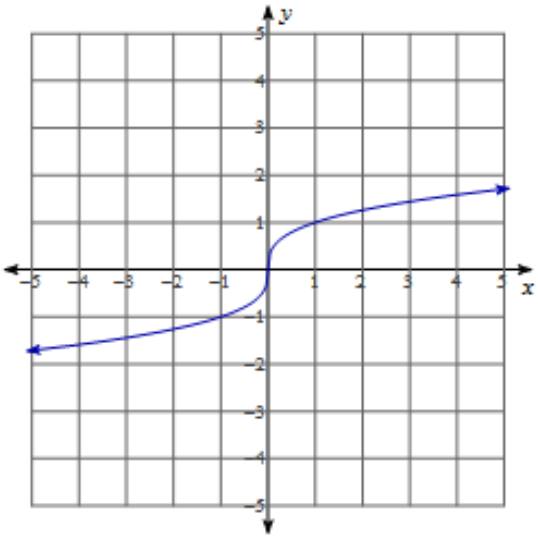


x	P(x)
-8	-2
-1	-1
0	0
1	1
8	2

Domain $(-\infty, \infty)$

Range $(-\infty, \infty)$

Parent Function



Who is this?

Parent function $y = \sqrt[3]{x}$

Domain $(-\infty, +\infty)$

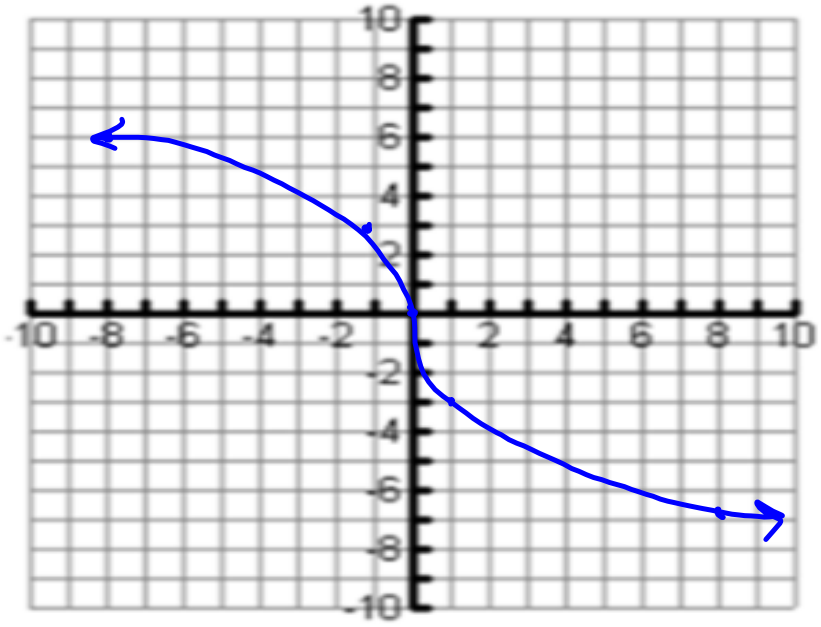
Range $(-\infty, +\infty)$

Horizontal Shift None

Vertical Shift None

Vertical Stretch None

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



x	P(x)	-3(y)
-8	-2	6
-1	-1	3
0	0	0
1	1	-3
8	2	-6

Parent function $y = \sqrt[3]{x}$

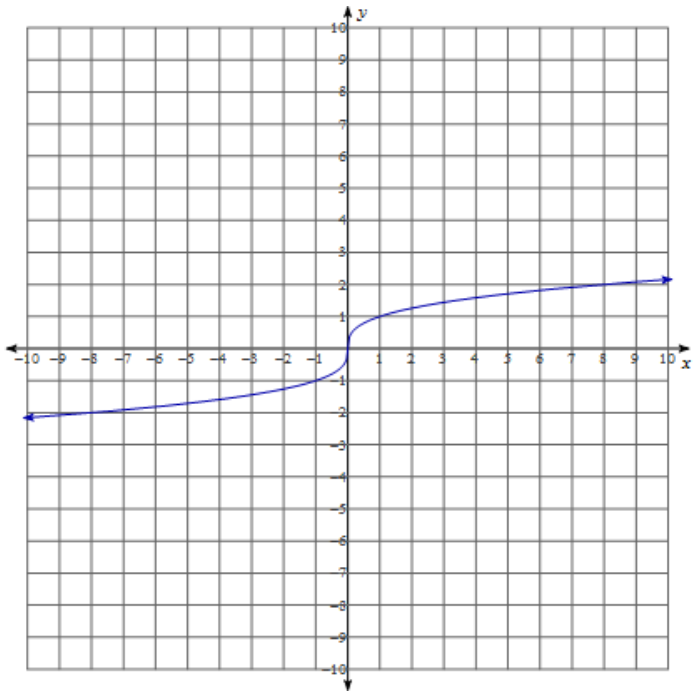
Domain $(-\infty, +\infty)$

Range $(-\infty, +\infty)$

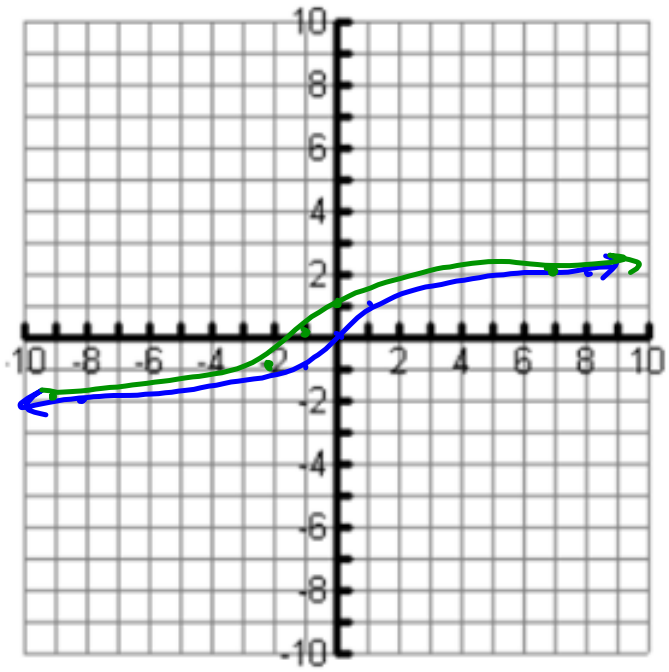
Horizontal Shift None

Vertical Shift None

Vertical Stretch 3 Reflection


y
x
10
9
8
7
6
5
4
3
2
1
−1
−2
−3
−4
−5
−6
−7
−8
−9
−10
−10 −9 −8 −7 −6 −5 −4 −3 −2 −1 1 2 3 4 5 6 7 8 9 10

$g(x) = \sqrt[3]{x+1}$



x	P(x)
-8	-2
-1	-1
0	0
1	1
9	2

Parent function _____

Domain _____

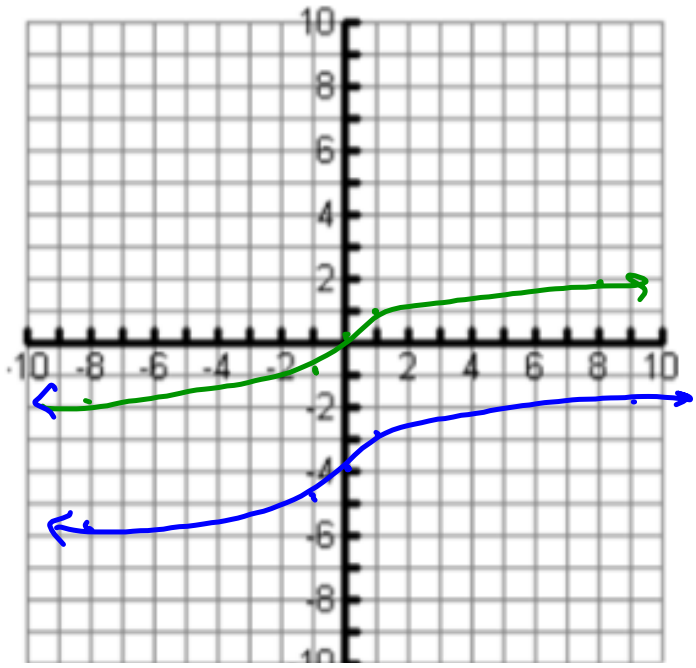
Range _____

Horizontal Shift _____

Vertical Shift _____

Vertical Stretch _____

$g(x) = \sqrt[3]{x} - 4$



x	P(x)	
-8	-2	-4
-1	-1	-4
0	0	-4
1	1	-4
8	2	-4

Parent function _____

Domain _____

Range _____

Horizontal Shift _____

Vertical Shift _____

Vertical Stretch _____

- Parent Functions
- Graph Parent Function (then repeat)

$$y = a\sqrt{x - h} + k$$

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

Parent function $y = \sqrt[3]{x}$

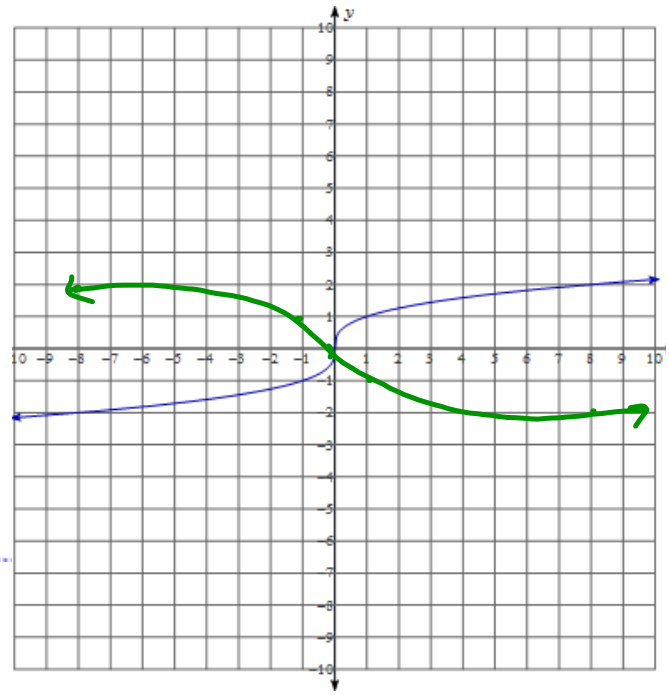
Domain $(-\infty, +\infty)$

Range $(-\infty, +\infty)$

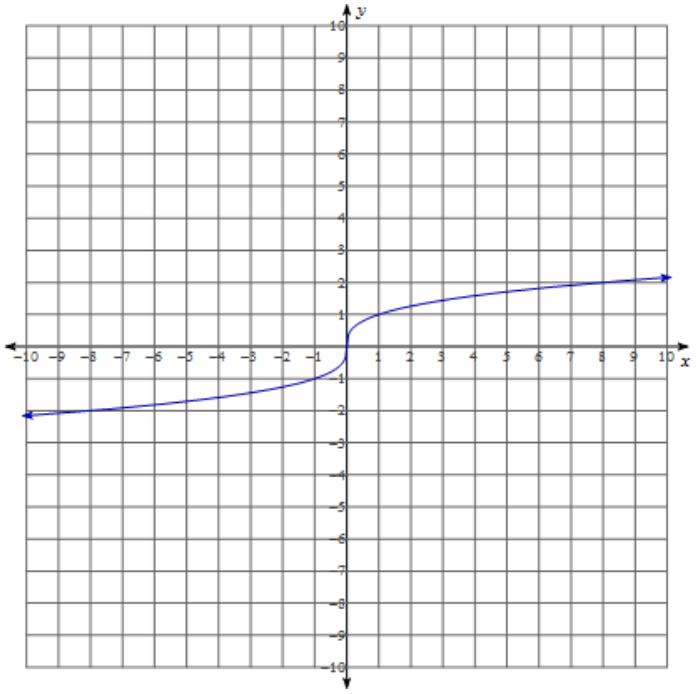
Horizontal Shift None

Vertical Shift None

Vertical Stretch Reflection



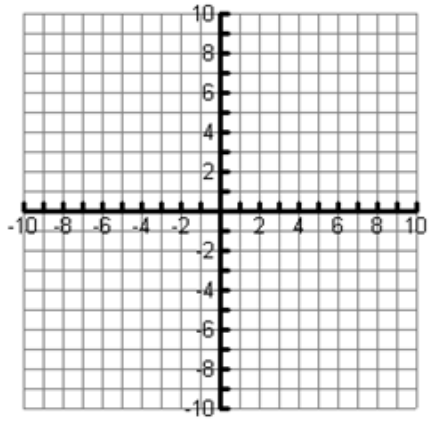
$$g(x) = \sqrt[3]{x} - 4$$



Algebra II Graphing Radical Functions **Name**_____ **Period**_____ **AW#**_____

Sketch the graphs of the following functions and their "parent" functions. State the domain and the range for the functions, and describe their shifts.

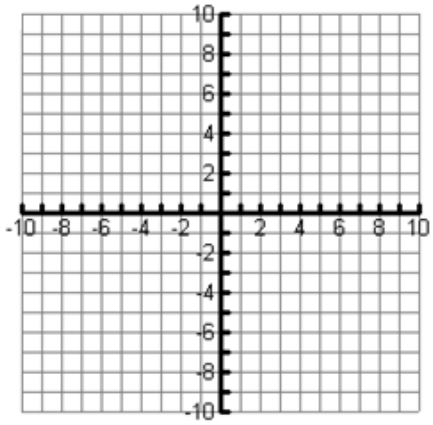
1) $f(x)=\sqrt{x+2}-3$



x	P(x)

Parent function _____
*Domain*_____
*Range*_____
*Horizontal Shift*_____
*Vertical Shift*_____
*Vertical Stretch*_____

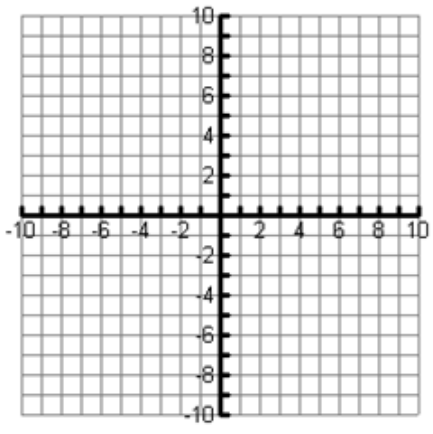
2) $g(x)=3\sqrt{x}+5$



x	P(x)

Parent function _____
*Domain*_____
*Range*_____
*Horizontal Shift*_____
*Vertical Shift*_____
*Vertical Stretch*_____

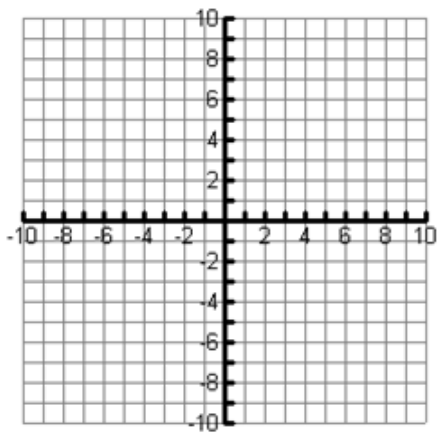
3) $h(x)=\sqrt[3]{x-2}-2$



x	P(x)

Parent function _____
*Domain*_____
*Range*_____
*Horizontal Shift*_____
*Vertical Shift*_____
*Vertical Stretch*_____

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

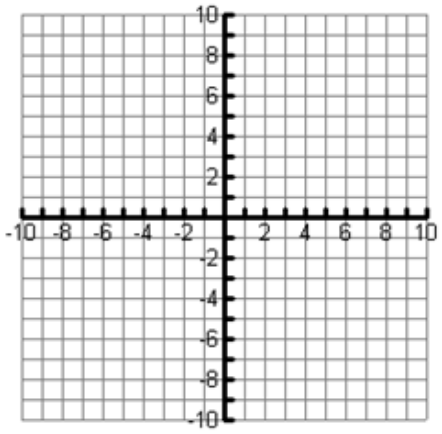


x	P(x)

Parent function _____
*Domain*_____
*Range*_____
*Horizontal Shift*_____
*Vertical Shift*_____
*Vertical Stretch*_____

1

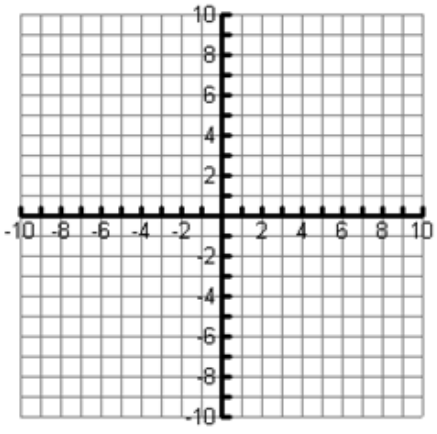
5) $g(x) = 6\sqrt{x+5}$



x	P(x)

Parent function _____
*Domain*_____
*Range*_____
*Horizontal Shift*_____
*Vertical Shift*_____
*Vertical Stretch*_____

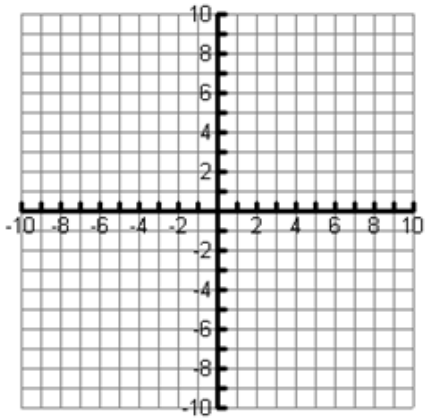
6) $g(x) = -2\sqrt{x-6}+4$



x	P(x)

Parent function _____
*Domain*_____
*Range*_____
*Horizontal Shift*_____
*Vertical Shift*_____
*Vertical Stretch*_____

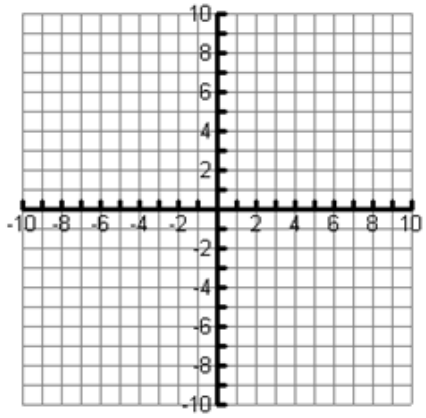
7) $h(x) = -\sqrt[3]{x+1} - 4$



x	P(x)

Parent function _____
*Domain*_____
*Range*_____
*Horizontal Shift*_____
*Vertical Shift*_____
*Vertical Stretch*_____

8) $h(x) = 3\sqrt[3]{x} - 1$



x	P(x)

Parent function _____
*Domain*_____
*Range*_____
*Horizontal Shift*_____
*Vertical Shift*_____
*Vertical Stretch*_____