

Good Morning!

Cell phones in holders.

Still no quizzes graded.

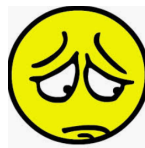


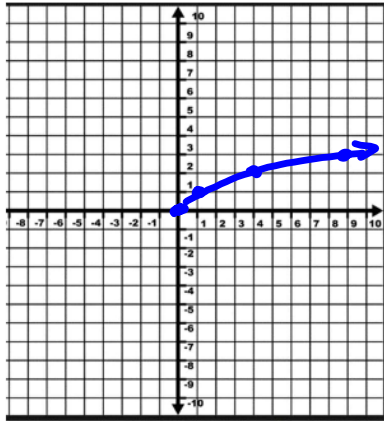
Table 1 Parent
Table 2 Given function.

Graphing Radical Equations using Transformations

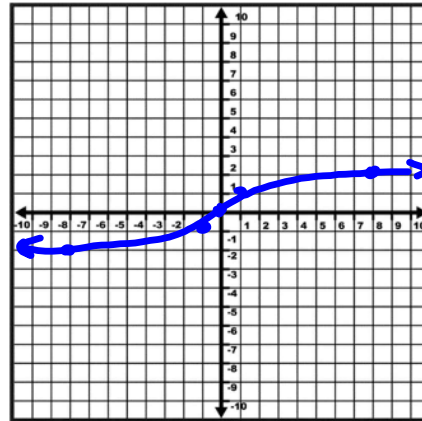
Remember your Parent Function:

Square root: $y = \sqrt{x}$

Cube root: $y = \sqrt[3]{x}$



x	y
0	0
1	1
4	2
9	3
16	4



x	y
-8	-2
-1	-1
0	0
1	1
8	2

Remember your Transformations:

GENERAL FORM FOR TRANSFORMATIONS of FUNCTION f(x): $a \cdot f(bx - h) + k$

"a" = vertical Stretch or compression, and reflection over x axis	"b" = horizontal reflection. Reflection over y-axis	"h" = horizontal shift	"k" = vertical shift
$a > 1$ Stretch $0 < a < 1$ Compress a is neg reflects over	<i>b is negative reflects over y</i> 	$+h$ left $-h$ Right	$+k$ up $-k$ down

$a\sqrt{bx-h} + k$

- stretch
- orig. compress
- Reflects over x.

$a\sqrt[3]{bx-h} + k$

$\sqrt[3]{-1x}$
 $-1 \cdot \sqrt[3]{x}$

$\sqrt{-x-4} \rightarrow \sqrt{-(x+4)}$

$-1(x+4)$

$$\begin{array}{l} -\sqrt{x} \\ \sqrt{-x} \end{array} \quad \begin{array}{l} x, -y \\ -x, y \end{array}$$

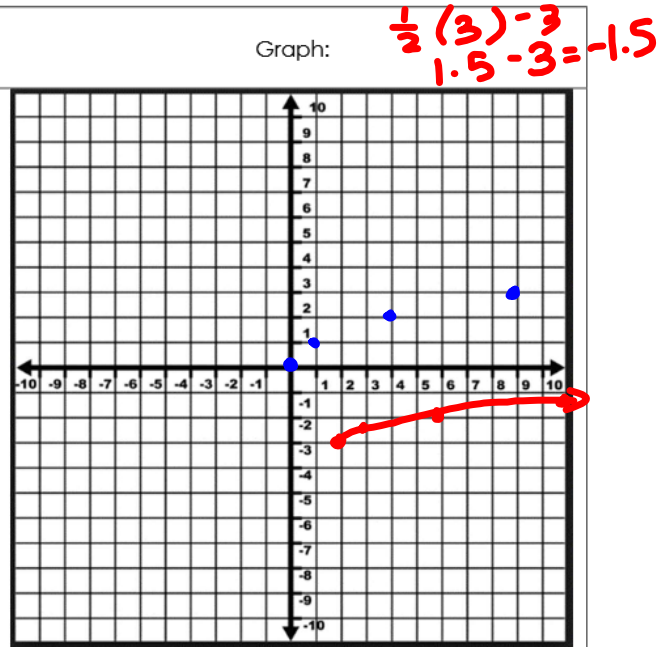
Putting it all together

Graph the function $f(x) = \frac{1}{2}\sqrt{x-2} - 3$ using a table of values and identify the characteristics.

Table:

Com + 1/2 *R+ +2* *down -3*

Parent Function		Given Function	
x	y	$x+2$	$\frac{1}{2}y-3$
0	0	2	-3
1	1	3	-2.5
4	2	6	-2
9	3	11	-1.5
16	4	18	-1

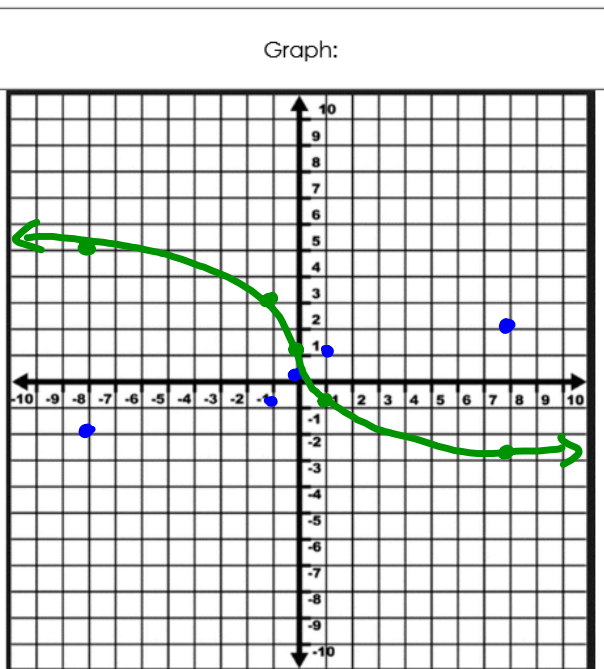


Graph the function $h(x) = -2\sqrt[3]{x} + 1$ using a table of values and identify the characteristics.

Table:

sqrt[3]x

Parent Function		Given Function	
x	y	x	$-2y+1$
-8	-2	-8	5
-1	-1	-1	3
0	0	0	1
1	1	1	-1
8	2	8	-3



State the transformation for the given examples below.

1. $f(x) = \sqrt{x+1} + 4$

left + 1
up 4

2. $f(x) = \sqrt[3]{x-3} - 1$

Right + 3
down 1

Write the EQUATIONS with described shifts and given parent functions.

3. $y = \sqrt[3]{x}$; Reflects over x axis and Right 3

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

4. $y = \sqrt{x}$ Down 2, Reflects over y axis, Vertical shrink of $1/6$

$f(x) = \frac{1}{6}\sqrt{-x} - 2$

$\sqrt{-x}$
D: $(-\infty, \#]$

