Name:_____ Hour: _____ Date: _____

NOTES: Section 6.5 – Graph Square Root and Cube Root Functions

Goals: #1 - I can graph square root functions and state their domain.

#2 - I can graph cube root functions and state their domain.

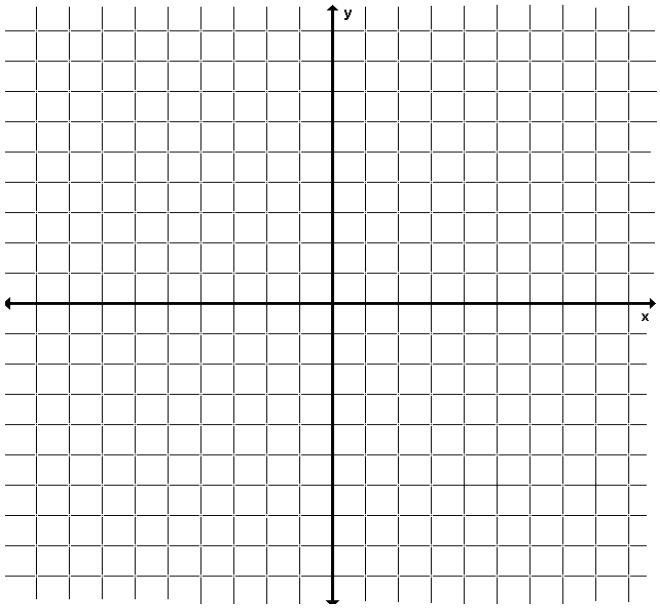


Homework: Lesson 6.5 Worksheet

Exploration #1: Work with a partner and answer the following questions. Graph the following function using a table of values.

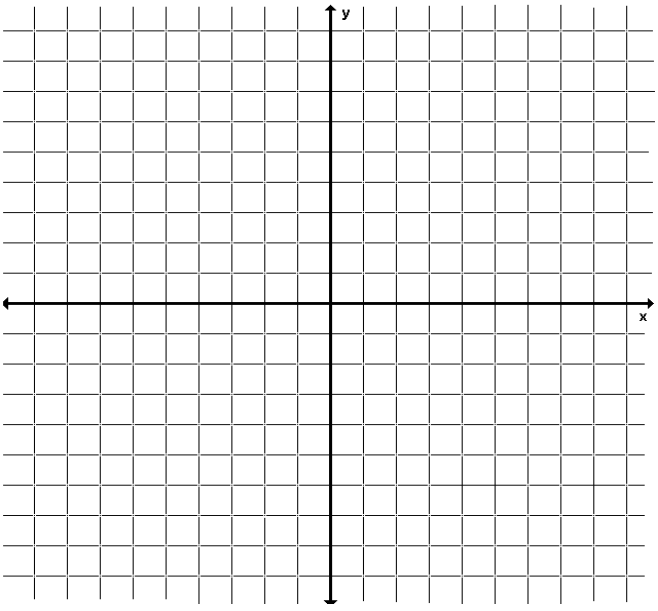
1. $y = \sqrt{x}$

x	y



2. $y = \sqrt[3]{x}$

x	y



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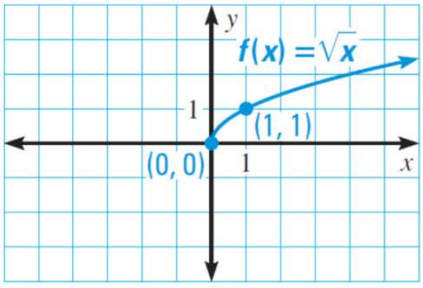
Notes:

KEY CONCEPT *For Your Notebook*

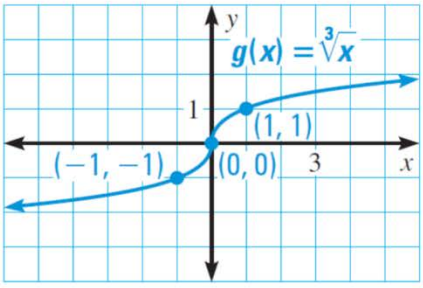
Parent Functions for Square Root and Cube Root Functions

The parent function for the family of square root functions is $f(x) = \sqrt{x}$.



Domain: Range:

The parent function for the family of cube root functions is $g(x) = \sqrt[3]{x}$.



Domain: Range:

REVIEW:

Transformation	$f(x)$ Notation	Examples
Vertical Translation *(shift up and down)*	*Shift Up* *Shift Down*	
Horizontal Translation *(shift left and right)*	*Shift Left* *Shift Right*	
Reflection *(in the x-axis)*		
Vertical Stretch/Shrink *(narrower and wider)*	*Narrower* *Wider*	

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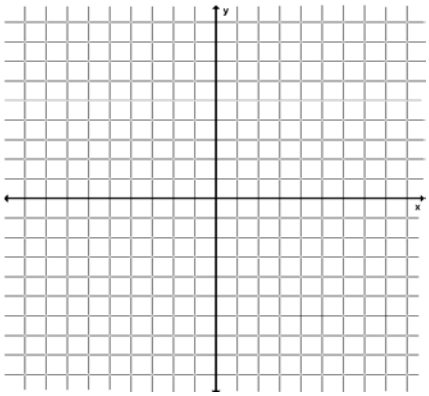
Example #1: Graph the function. Then state the domain and range. Lastly, compare the function with its parent function.

1. $y = 2\sqrt{x}$

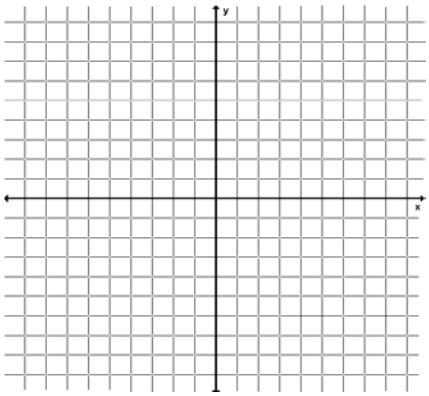


domain: _____

range: _____

comparison:

2. $y = -\frac{1}{2}\sqrt[3]{x}$

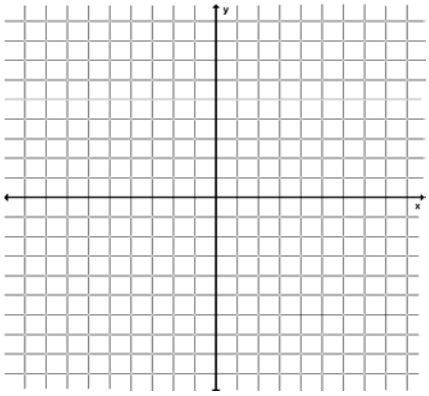


domain: _____

range: _____

comparison:

3. $y = 3\sqrt{x-1} + 2$

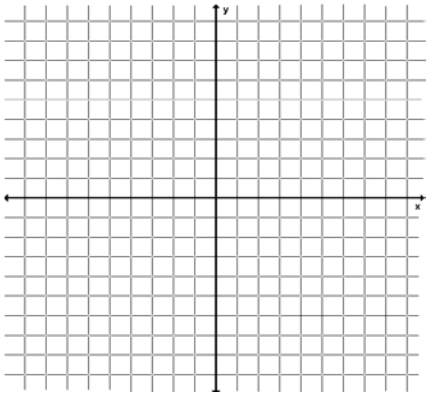


domain: _____

range: _____

comparison:

4. $y = -2\sqrt[3]{x+3} - 2$



domain: _____

range: _____

comparison:

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Example #2: Find the domain and range of the function without graphing.

1. $y = \sqrt{x-3}$
2. $y = \frac{1}{3}\sqrt[3]{x+7}$
3. $y = 2\sqrt{x} + 2$

You practice: Find the domain and range of the function without graphing.

1. $y = \sqrt[3]{x+1}$
2. $y = \sqrt{x-1} - 1$
3. $y = \frac{1}{6}\sqrt{x-2} + 4$