

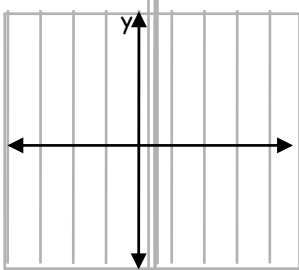
6.5 Graphing Radical Functions

Name _____

Advanced Algebra

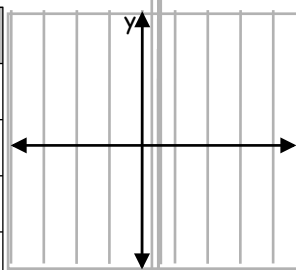
Graph the following radical functions:

x	y
0	
1	
4	
9	



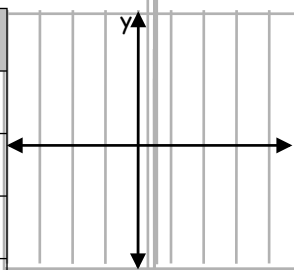
$$y = \sqrt{x}$$

x	y
0	
1	
4	
9	



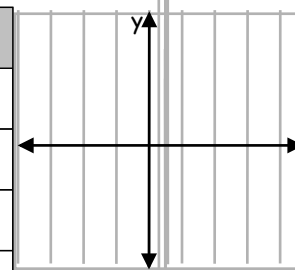
$$y = 2\sqrt{x}$$

x	y
-8	
-1	
0	
1	
8	



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

x	y
-8	
-1	
0	
1	
8	



$$y = -3\sqrt[3]{x}$$

GRAPHS OF RADICAL FUNCTIONS

To graph $y = a\sqrt{x-h} + k$ or $y = a\sqrt[3]{x-h} + k$, follow these steps

Step 1:

Step 2:

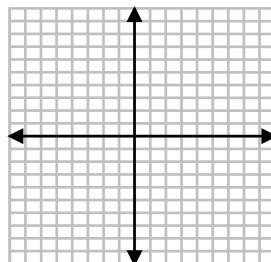
Example #1: Comparing Two graphs.

a) Describe how to obtain the graph of $y = \sqrt[3]{x-2} + 1$ from the graph of $y = \sqrt[3]{x}$.

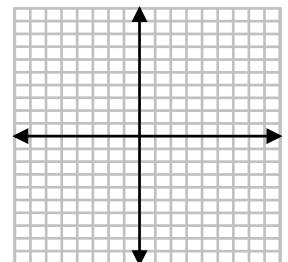
b) Describe how to obtain the graph of $y = \sqrt{x-3} + 2$ from the graph of $y = \sqrt{x}$.

Example #2: Graphing a Square Root Function. State the Domain and Range.

a) Graph $y = 2\sqrt{x+4} - 1$

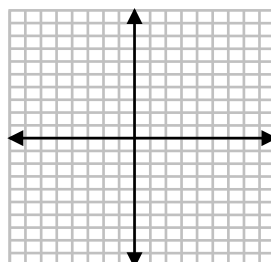


b) Graph $y = -3\sqrt{x+2} - 1$

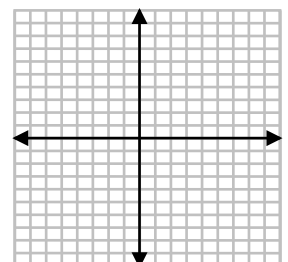


Example #3: Graphing a Cube Root Function. State the Domain and Range.

a) Graph $y = -2\sqrt[3]{x-3} + 2$



b) Graph $y = 3\sqrt[3]{x+1} - 1$

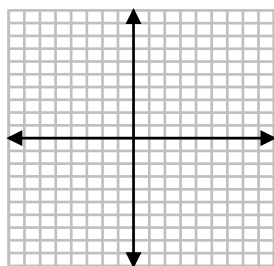


Comparing Two graphs.

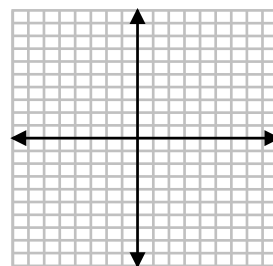
1. Describe how to obtain the graph of $y = -\sqrt[3]{x} - 10$ from the graph of $y = -\sqrt[3]{x}$.
2. Describe how to obtain the graph of $y = \sqrt{x+14}$ from the graph of $y = \sqrt{x}$.
3. Describe how to obtain the graph of $y = \sqrt[3]{x+6} - 5$ from the graph of $y = \sqrt[3]{x}$.
4. Describe how to obtain the graph of $y = 5\sqrt{x-10} - 3$ from the graph of $y = 5\sqrt{x}$.

Graph the Square Root Function. State the Domain and Range.

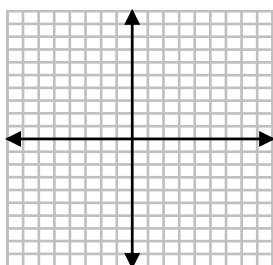
5. Graph $y = \sqrt{x+6} - 1$



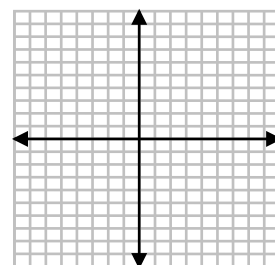
6. Graph $y = (x-1)^{1/2} + 7$



7. Graph $y = 2\sqrt{x+5} - 1$

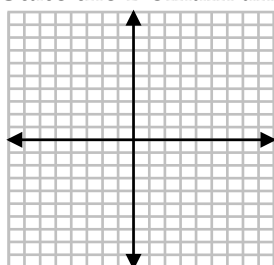


8. Graph $y = -3\sqrt{x-2} + 1$

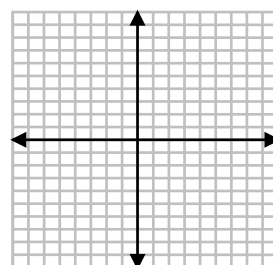


Graph the Cube Root Function. State the Domain and Range.

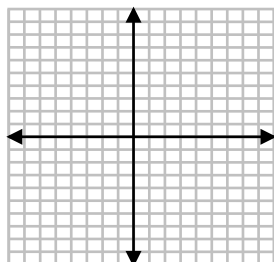
9. Graph $y = \sqrt[3]{x} - 7$



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



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



12. Graph $y = (x+2)^{1/3} - 2$

