**10.3 Explore /explain Square and Cube Root Transformations**

**Quadratic & Square Root Functions**

** **

|  |  |
| --- | --- |
| **X** | **Y** |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |
| 3 |  |

|  |  |
| --- | --- |
| **X** | **Y** |
| -4 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 4 |  |
| 9 |  |



Domain: \_\_\_\_\_\_\_\_\_ Range:\_\_\_\_\_\_\_\_\_\_

x-int: \_\_\_\_\_\_\_\_\_ y-int:\_\_\_\_\_\_\_\_\_\_\_

min:\_\_\_\_\_\_\_\_\_\_\_\_ max:\_\_\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_ Range:\_\_\_\_\_\_\_\_\_\_

x-int: \_\_\_\_\_\_\_\_\_\_ y-int:\_\_\_\_\_\_\_\_\_\_\_

min:\_\_\_\_\_\_\_\_\_\_\_\_\_ max:\_\_\_\_\_\_\_\_\_\_\_

Why do you think the table gives you an error for a y value for ****?

**For the following list the transformations compared to the parent function, find the domain, range, maximum, and minimum. Sketch if needed.**

1) 

List transformations:

Domain: Maximum:

Range: Minimum:

2) $f(x)= \sqrt[ ]{-\frac{1}{3}(x+4)}+6$



List transformations:

Domain: Maximum:

Range: Minimum:

3)

List transformations:

Domain: Maximum:

Range: Minimum:

**For the following functions find . Note domain restrictions.**

4)  5) 

**Cube & Cube Root Functions**

** **

|  |  |
| --- | --- |
| **X** | **Y** |
| -2 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 2 |  |

|  |  |
| --- | --- |
| **X** | **Y** |
| -8 |  |
| -1 |  |
| 0 |  |
| 1 |  |
| 8 |  |



Domain: \_\_\_\_\_\_\_\_\_\_ Range:\_\_\_\_\_\_\_\_

x-int: \_\_\_\_\_\_\_\_\_\_ y-int:\_\_\_\_\_\_\_\_

min:\_\_\_\_\_\_\_\_\_\_\_\_\_ max:\_\_\_\_\_\_\_\_\_\_

Domain: \_\_\_\_\_\_\_\_\_\_ Range:\_\_\_\_\_\_\_\_

x-int: \_\_\_\_\_\_\_\_\_\_ y-int:\_\_\_\_\_\_\_\_

min:\_\_\_\_\_\_\_\_\_\_\_\_\_ max:\_\_\_\_\_\_\_\_\_\_

**For the following list the transformations compared to the parent function, find the domain, range, maximum, and minimum. Sketch if needed.**



1) $f(x)= \sqrt[3]{(x-1)}-5$

List transformations:

Domain: Maximum:

Range: Minimum:



2) $f(x)= 2\sqrt[3]{(x+4)}+6$

List transformations:

Domain: Maximum:

Range: Minimum:



3) $f(x)= \sqrt[3]{-\left(x+6\right)}-4$

List transformations:

Domain: Maximum:

Range: Minimum

**For the following functions find . Note domain restrictions.**

4)  5) 

**Compositions of Functions Notes**

**FUNCTION PROPERTIES:**

Given functions  and  the following properties hold true:

COMPOSITION: 

To compose two functions means to make the output of one function the input of another function.

1. ![[image]]()Given the following graph of f(x) and g(x) find the following:

f(x)

* 1. 
	2. 

g(x)

* 1. 
	2. 
	3. 
1. Given the functions , , , and  find:

 **a) = b)  c) **

 **d)** f(3) = **e)** g(-3) = **f)** g(5) =

**g)** g(h(1))= **h)** h(f(-1))= **i)** j(h(2)) =

 **j)  k)  l) **