**SL1 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Intro to Transformations: Square Roots**

**Complete each table and plot the graph. State the domain and range. Then describe how the function differs from** $y=\sqrt{x}$

|  |  |
| --- | --- |
| X | Y=f(x) |
| 0 |  |
| 1 |  |
| 4 |  |
| 6 |  |
| 9 |  |

|  |  |  |
| --- | --- | --- |
| X | Y=f(x) | f(x)-5 |
| 0 |  |  |
| 1 |  |  |
| 4 |  |  |
| 6 |  |  |
| 9 |  |  |

*y*

*x*

**Description: PARENT GRAPH**

$$f\left(x\right)=\sqrt{x}$$

*y*

*x*

$$f\left(x\right)-5=\sqrt{x}-5$$

**Description:**

1.

2.

$\frac{1}{2}f\left(x\right)+4=\frac{1}{2}\sqrt{x}$ **+ 4**

6.

5.

**Description:**

*y*

*x*

$$-f\left(x\right)=-\sqrt{x}$$

**Description:**

*y*

*x*

|  |  |
| --- | --- |
| **X** | **Y** |
| 0 |  |
| 1 |  |
| 4 |  |
| 6 |  |
| 9 |  |

|  |  |
| --- | --- |
| X | Y |
| 0 |  |
| 1 |  |
| 4 |  |
| 6 |  |
| 9 |  |

|  |  |  |
| --- | --- | --- |
| X | Y=f(x) | 2f(x) |
| 0 |  |  |
| 1 |  |  |
| 4 |  |  |
| 6 |  |  |
| 9 |  |  |

|  |  |  |
| --- | --- | --- |
| X | Y=f(x) | f(x)+1 |
| 0 |  |  |
| 1 |  |  |
| 4 |  |  |
| 6 |  |  |
| 9 |  |  |

*y*

*x*

**Description:**

$$2f\left(x\right)=2\sqrt{x}$$

*y*

*x*

$$f\left(x\right)+1=\sqrt{x}+1$$

**Description:**

3.

4.

D: R:

D: R:

D: R:

D: R:

D: R:

D: R:

|  |  |  |
| --- | --- | --- |
| X | 0.5X | Y=f(0.5x) |
|  |  | 0 |
|  |  | 1 |
|  |  | 2 |
|  |  | 2.45 |
|  |  | 3 |

|  |  |  |
| --- | --- | --- |
| x | -X | Y=f(-x) |
|  |  | 0 |
|  |  | 1 |
|  |  | 2 |
|  |  | 2.45 |
|  |  | 3 |

|  |  |  |
| --- | --- | --- |
| x | X-1 | Y |
|  |  | 0 |
|  |  | 1 |
|  |  | 2 |
|  |  | 2.45 |
|  |  | 3 |

|  |  |  |
| --- | --- | --- |
| x | X+5 | Y |
|  |  | 0 |
|  |  | 1 |
|  |  | 2 |
|  |  | 2.45 |
|  |  | 3 |

*y*

*x*

**Description:**

$$f\left(x-1\right)=\sqrt{x-1}$$

*y*

*x*

$$f\left(x+5\right)=\sqrt{x+5}$$

**Description:**

7.

8.

$$f\left(-2\left(x-6\right)\right)=\sqrt{-2\left(x-6\right)}$$

$$f\left(\frac{1}{2}x\right)=\sqrt{\frac{1}{2}x}$$

D: R:

D: R:

D: R:

D: R:

D: R:

D: R:

$$f\left(2x+4\right)=\sqrt{2x+4}$$

12.

11.

**Description:**

*y*

*x*

**Description:**

*y*

*x*

|  |  |  |
| --- | --- | --- |
|  | X | Y |
|  |  | 0 |
|  |  | 1 |
|  |  | 2 |
|  |  | 2.45 |
|  |  | 3 |

|  |  |  |
| --- | --- | --- |
|  | X | Y |
|  |  | 0 |
|  |  | 1 |
|  |  | 2 |
|  |  | 2.45 |
|  |  | 3 |

10.

9.

**Description:**

*y*

*x*

$$f\left(-x\right)=\sqrt{-x}$$

**Description:**

*y*

*x*