

# Day 6

Day Of Assignment: Parent Function Investigation for square root functions.

Parent Function:

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

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x	f(x)
0	0
1	1
4	2
9	3

Describe the graph:

This is a square root function. It looks like a half a parabola on its side. As  $x$  increases,  $y/f(x)$  increases by 1. It has a starting point at the origin  $(0,0)$ , and continues to the right infinitely. There are no lines of symmetry.

The minimum is  $(0,0)$  there is no maximum point. The domain ( $x$ -values) is  $0 \leq x < \infty$  or  $[0, \infty)$  and the range ( $y$ -values) is  $0 \leq y < \infty$  or  $[0, \infty)$ .

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

x	f(x)
0	0
1	-1
4	-2
9	-3

Describe the graph. How is it different than the parent function? Where do you see the difference in the equation? Table? Graph?

This graph looks exactly like the parent function  $f(x) = \sqrt{x}$  except it is flipped down in the negatives. It has a starting point at the origin  $(0,0)$  and continues towards  $\infty$  as an  $x$ -value and  $-\infty$  as a  $y$ -value. The max point is  $(0,0)$ , there is no minimum. The domain is  $0 \leq x < \infty$  or  $[0, \infty)$  and the range is  $-\infty < y \leq 0$  or  $(-\infty, 0]$ .

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

x	f(x)

Describe the graph. How is it different than the parent function? Where do you see the difference in the equation? Table? Graph? negative.

