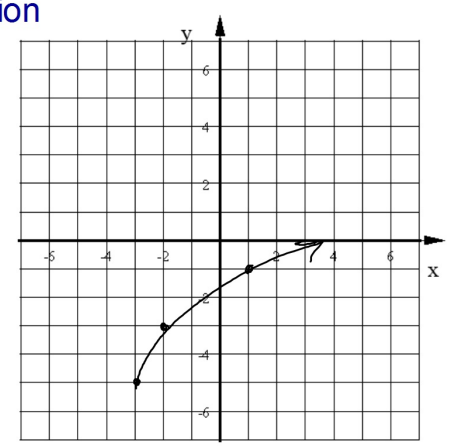
Graph this square root function

$$y = 2\sqrt{x+3} - 5$$

Starting Point:
3 left, 5 down (-3,-5)

2 times taller

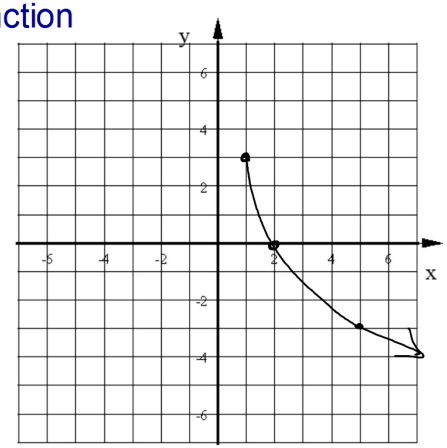


Graph this square root function

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

Starting Point:
1 right, 3 up (1,3)

3 times taller, upside down

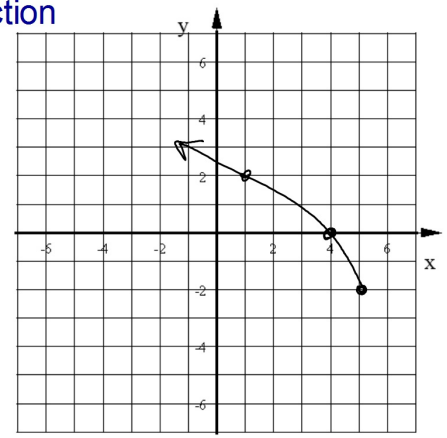


Graph this square root function

$$y = 2\sqrt{-(x-5)} - 2$$

Starting Point:
5 right, 2 down (5,-2)

2 times taller, backwards

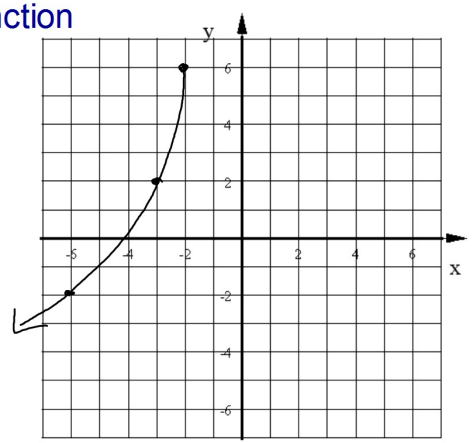


Graph this square root function

$$y = -4\sqrt{-(x+2)} + 6$$

Starting Point:
2 left, 6 up (-2,6)

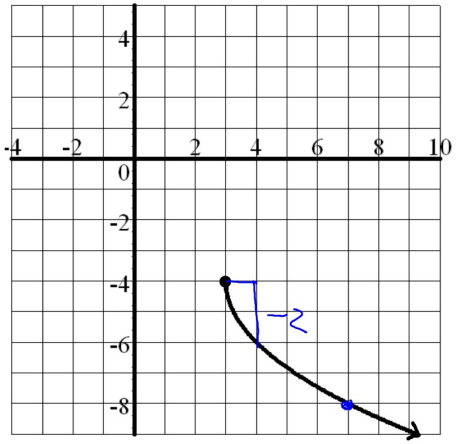
4 times taller, upside down, backwards



Write the equation of this function

upside down
3 right 4 down

$y = -2\sqrt{x-3} - 4$

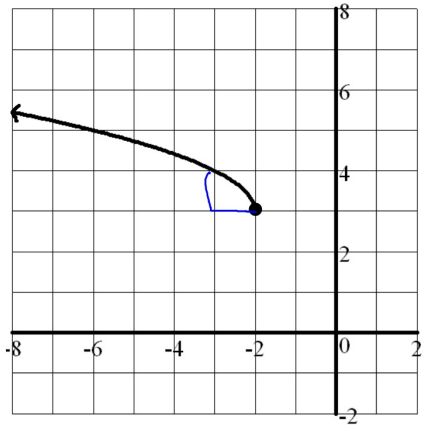


Write the equation of this function

2 left 3 up

backwards

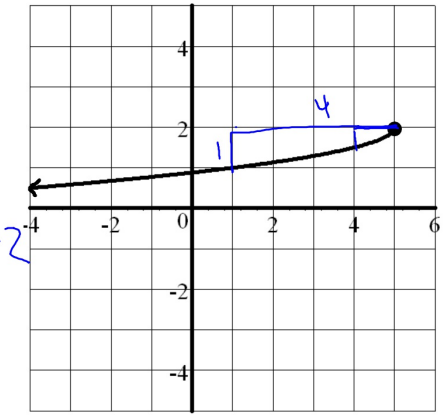
$y = \sqrt{-(x+2)} + 3$



Write the equation of this function

$y = -\frac{1}{2}\sqrt{-(x-5)} + 2$

upside down, 1/2 as tall
moved 5 right and 2 up



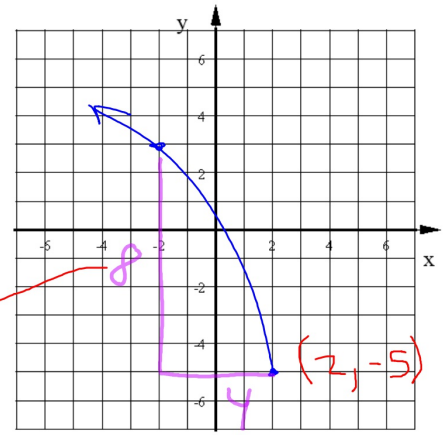
Write the equation of this function

moved 2 right and 5 down

$y = 4\sqrt{-(x-2)} - 5$

backwards

4 X Taller



Domain and Range of Square Root Functions:

State the Domain and Range of the following Square Root Functions.

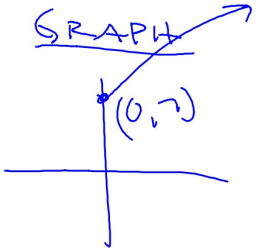
1. $y = \sqrt{x} + 7$

ALG

D: $x \geq 0$ The input can't be negative

R: $y \geq 7$ The output from the square root is not negative so y will always be 7 or more.

GRAPH



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

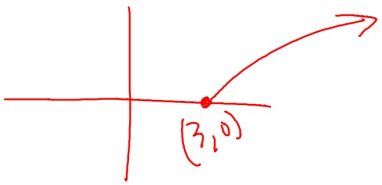
ALG

$x - 3 \geq 0$ The input can't be negative

D: $x \geq 3$

R: $y \geq 0$ The output is not negative

GRAPH



Domain: to the right from 3 $x \geq 3$

Range: up from 0 $y \geq 0$

3. $y = -\sqrt{x+4} - 5$

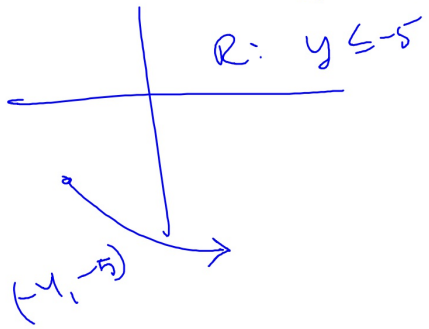
D $x + 4 \geq 0$

$x \geq -4$

R: $y \leq -5$

D: $x \geq -4$

R: $y \leq -5$



4.

$y = -5\sqrt{-(x-1)} - 2$

$-(x-1) \geq 0$

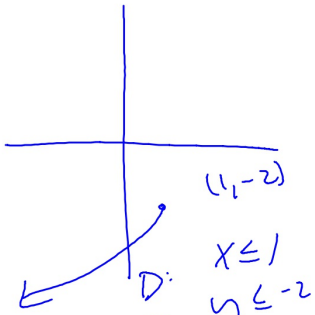
$-x+1 \geq 0$

$-1 \quad -1$

$x \leq 1$ $\quad -x \geq -1$

$\frac{}{-1} \quad \frac{}{-1}$

$R \leq -2$



D: $x \leq 1$

R: $y \leq -2$