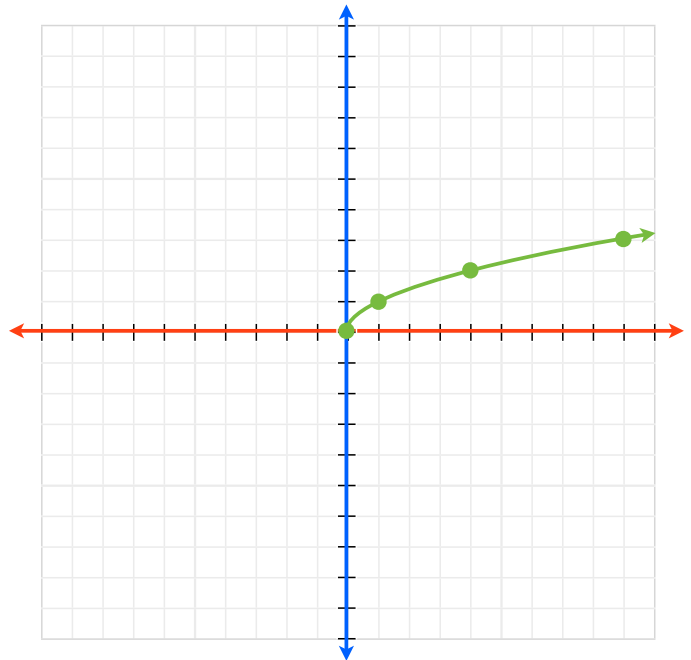


The Radical/Square Root Parent Function

$$y = \sqrt{x}$$

x	y
0	0
1	1
4	2
9	3

⇐ starting point



Radical/Square Root Function

$|a|$ gives vertical stretch or compression
 $a > 0$ upward; $a < 0$ downward

h gives the x -coordinate of starting point;
 the horizontal translation

$$y = a\sqrt{\frac{1}{b}(x - h)} + k$$

$|b|$ gives horizontal stretch or compression
 $b > 0$ right; $b < 0$ left

k gives the y -coordinate of starting point;
 the vertical translation

Radical/Square Root Function

$$y = a\sqrt{\frac{1}{b}(x - h)} + k$$

Given radical equation, label a , b , h , and k .

$$y = 2\sqrt{x - 4} + 9$$

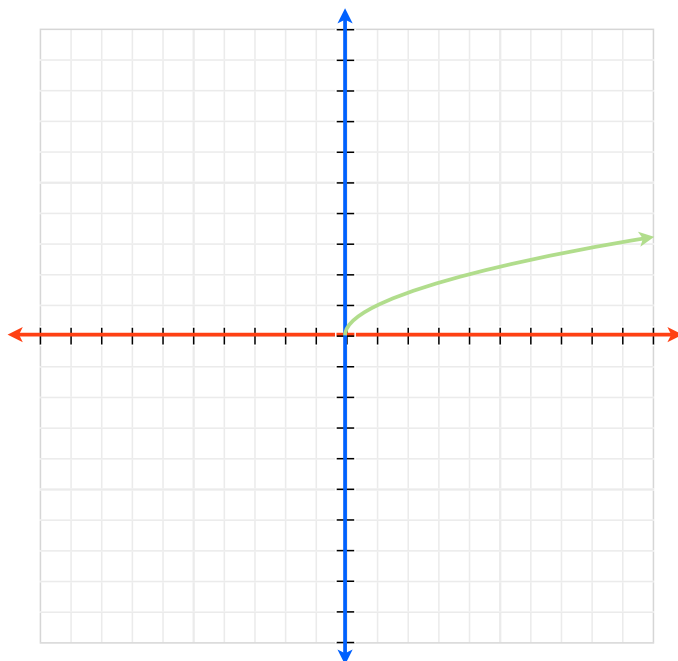
$$y = -\sqrt{x + 3} - 2$$

$$y = \sqrt{x} + 6$$

$$y = -4\sqrt{-(x + 1)}$$

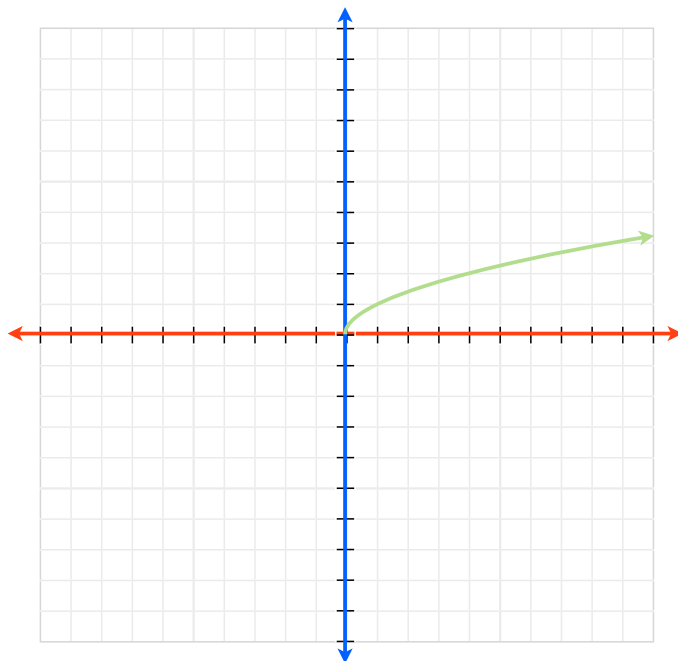
Graph the following radical functions

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



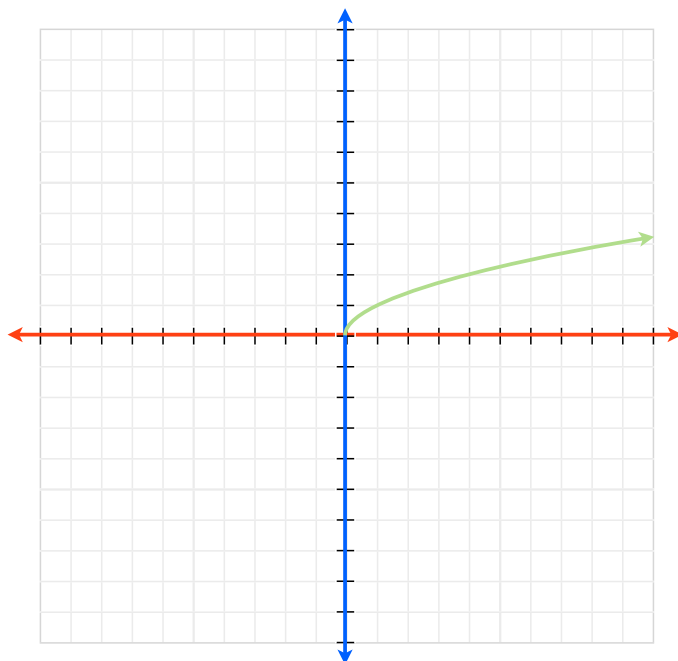
Graph the following radical functions

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



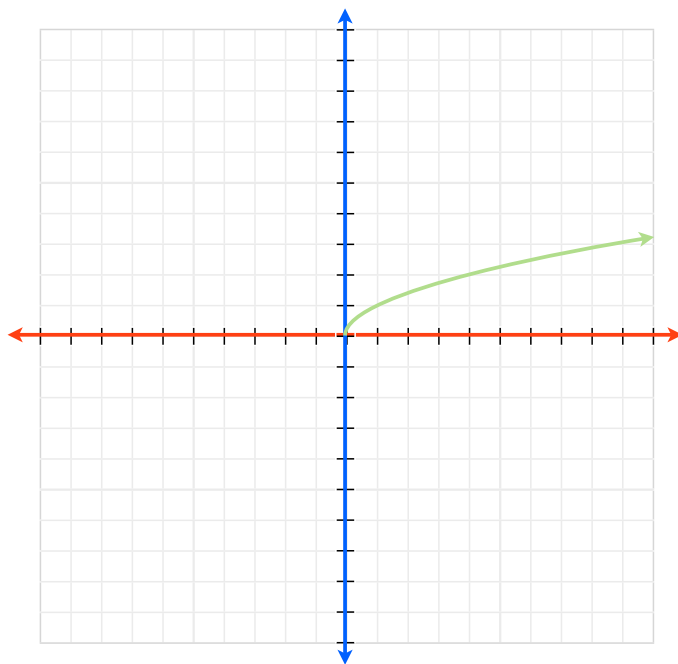
Graph the following radical functions

$$y = -\sqrt{x-2} + 1$$



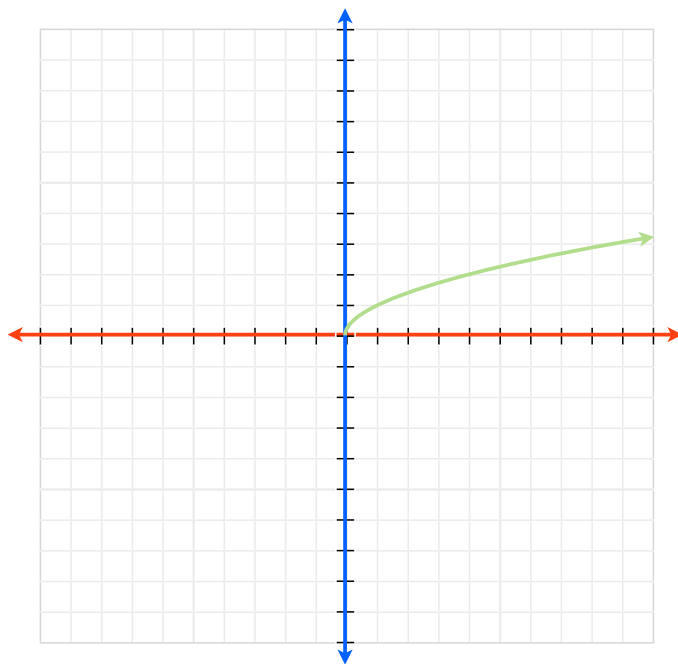
Graph the following radical functions

$$y = -2\sqrt{-(x-5)} + 6$$



Graph the following radical functions

$$y = 3\sqrt{-(x-7)} - 2$$



Radical/Square Root Function

$|a|$ gives vertical stretch or compression
 $a > 0$ upward; $a < 0$ downward

h gives the x -coordinate of starting point;
the horizontal translation

$$y = a\sqrt{\frac{1}{b}(x - h)} + k$$

$|b|$ gives horizontal stretch or compression
 $b > 0$ right; $b < 0$ left

k gives the y -coordinate of starting point;
the vertical translation