

Name : \_\_\_\_\_

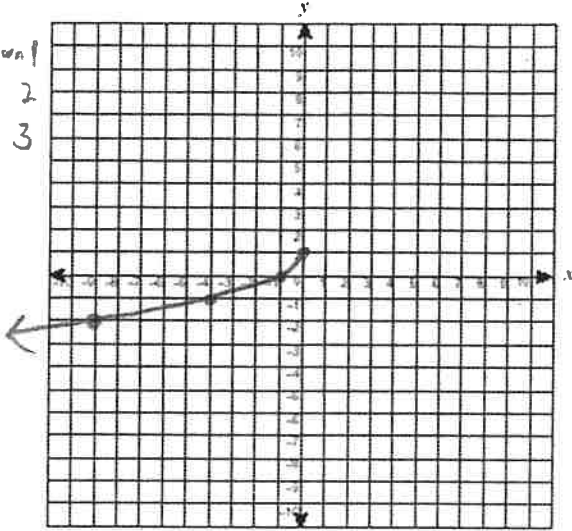
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**Radical Functions & Graphing Part 1 Worksheet**

For each radical function, graph the function and state the *domain*, *range*, *x-int*, and *y-int*:

1)  $y = -\sqrt{-x} + 1$  vertex (0,1)

left 1 down 1  
4 2  
9 3

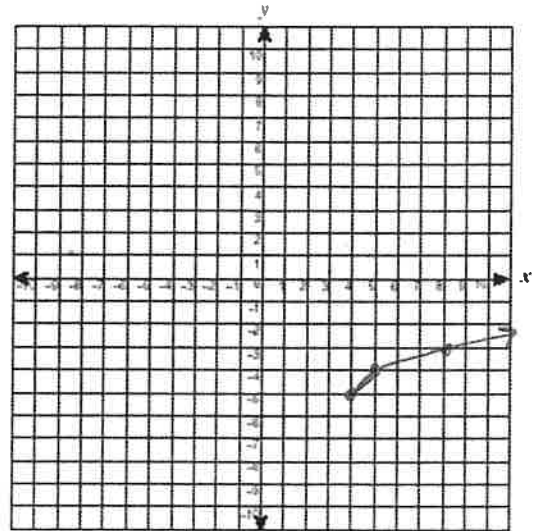


Domain:  $x \leq 0$     x-int: -1  
Range:  $y \leq 1$     y-int: 1

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

R 1, U 1  
4 2  
9 3

x-int  
 $5 = \sqrt{x-4}$   
 $25 = x-4$   
 $x = 29$

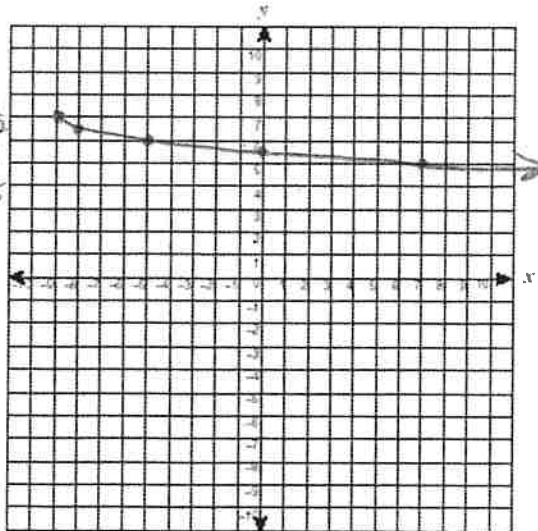


Domain:  $x \geq 4$     x-int: 29  
Range:  $y \geq -5$     y-int: none

3)  $y - 7 = -\frac{1}{2}\sqrt{x+9} \Rightarrow y = -\frac{1}{2}\sqrt{x+9} + 7$

Vertex (-9,7)  
right 1, down 1  
4 1  
9 1.5  
16 2

x-int  
 $-7 = -\frac{1}{2}\sqrt{x+9}$   
 $14 = \sqrt{x+9}$   
 $196 = x+9$   
 $x = 187$

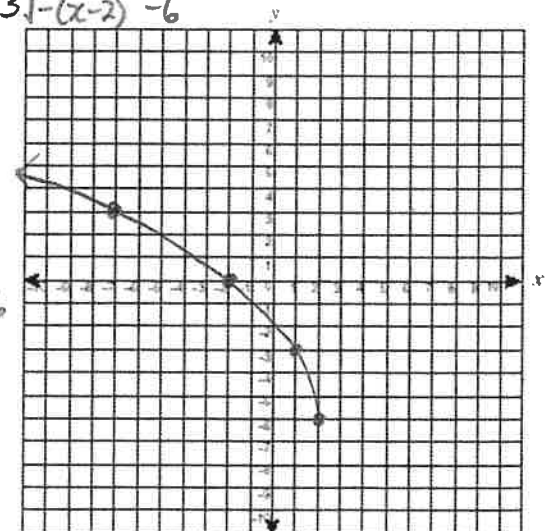


Domain:  $x \geq -9$     x-int: 187  
Range:  $y \leq 7$     y-int: 5.5

4)  $y = 3\sqrt{2-x} - 6$  vertex (2,-6)

$y = 3\sqrt{-(x-2)} - 6$   
left 1, up 3  
4 6  
9 9

y-int  
 $y = 3\sqrt{2} - 6$



Domain:  $x \leq 2$     x-int: -2  
Range:  $y \geq -6$     y-int:  $3\sqrt{2} - 6$

For each radical function, find the *domain*, *range*, *x-int*, and *y-int* without graphing:

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

vertex (5,0)

right 1, up 1

4	2
9	3

Domain: $x \geq 5$	x-int: 5
Range: $y \geq 0$	y-int: none

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

vertex (0,-4)

right 1, down 1

4	2
9	3

Domain: $x \geq 0$	x-int: none
Range: $y \leq -4$	y-int: -4

7)  $y = 1 + 4\sqrt{2-x}$

$y = 4\sqrt{-(x-2)} + 1$

vertex (2,1)

left 1, up 4

4	8
9	12

y-int:

$y = 1 + 4\sqrt{2-0}$

$y = 1 + 4\sqrt{2}$

Domain: $x \leq 2$	x-int: none
Range: $y \geq 1$	y-int: $1 + 4\sqrt{2}$

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

vertex (-3,-2)

right 1, down 2

4	4
9	6

y-int:

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

Domain: $x \geq -3$	x-int: none
Range: $y \leq -2$	y-int: $-2\sqrt{3} - 2$