Name:_____ Date:_____

HW M12P Section 2.1 Graphing Radical Functions:

1. How do you tell whether if a radical function opens to the left or the right?

2. Given the radical function $y = \frac{1}{A}\sqrt{\left(B\left(x-C\right)\right)} + D$, where "A,B,C, and D" are all positive, what the domain and range of this function?

3. Using the same formula from above, if $A < 0$, $B < 0$, $C > 0$ and $D < 0$, what is the domain of the function?

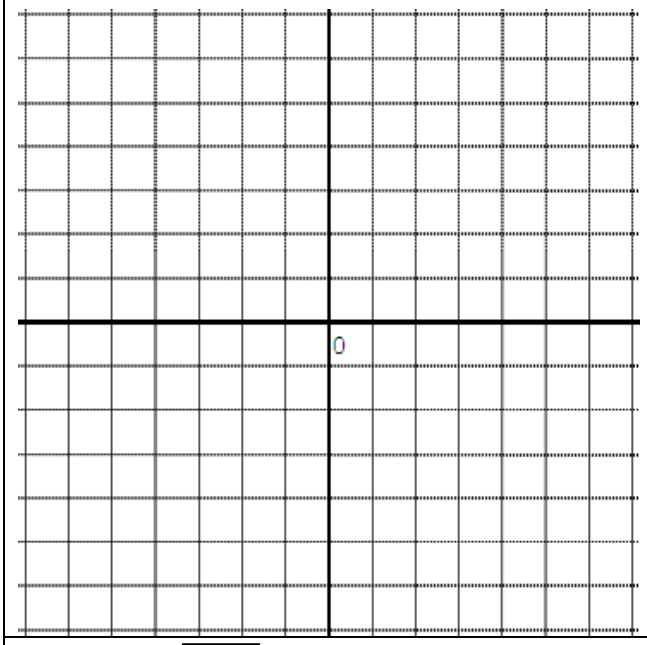
4. What are the steps in graphing a radical function? Explain:

5. Indicate which way the radical functions open: UP/DOWN/LEFT/RIGHT? Then state the domain and range:

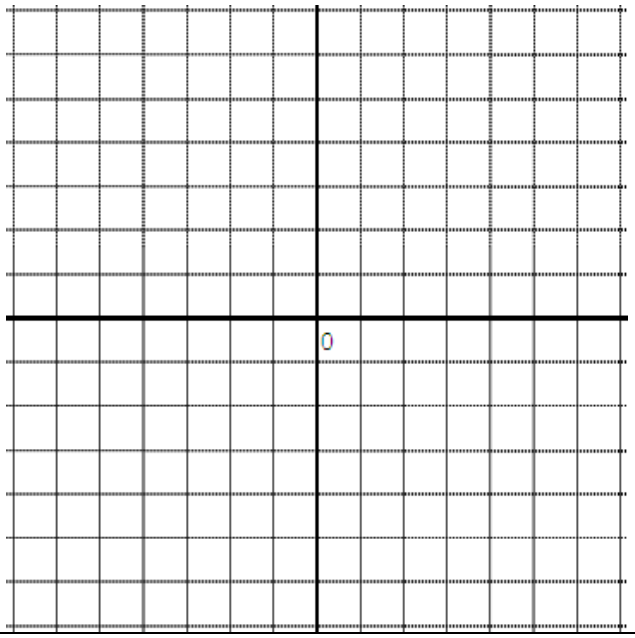
a) $y = 4 + \sqrt{3x+2}$	b) $y = -3 - \sqrt{5x-17}$
c) $4 - y = \sqrt{6-4x}$	d) $8 + 2y = 7 - \sqrt{-7x-2}$
e) $y = -\frac{2}{3}\left(7 - \sqrt{-6-x}\right)$	f) $7y + \sqrt{-\left(2+x\right)} + 9 = 0$

6. Graph the following radical functions. State the domain and range:

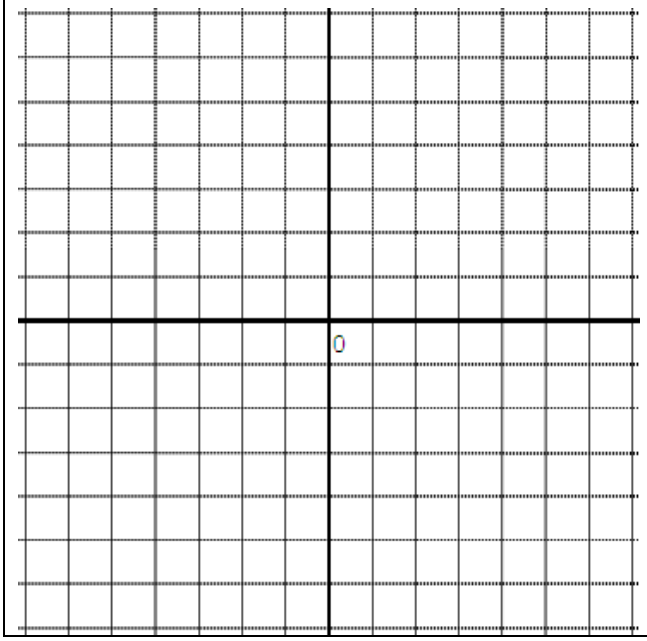
a) $y = \sqrt{2x+3} - 4$



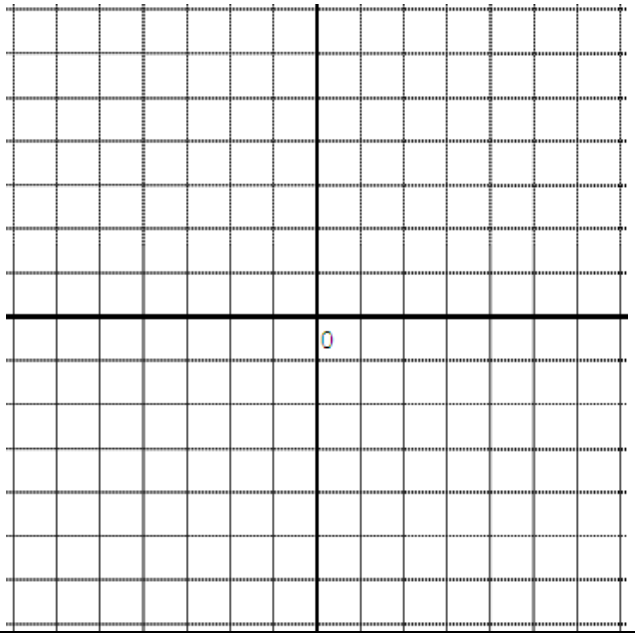
b) $y = 4 - \sqrt{5-2x}$



c) $y = 4 - 3\sqrt{6-5x}$

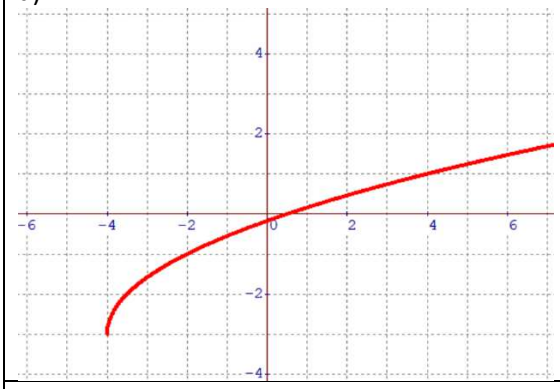


d) $y = 2\sqrt{8+3x} - 5$

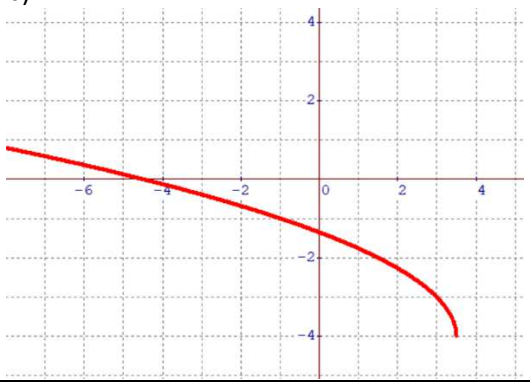


7. Find the equation of the radical functions:

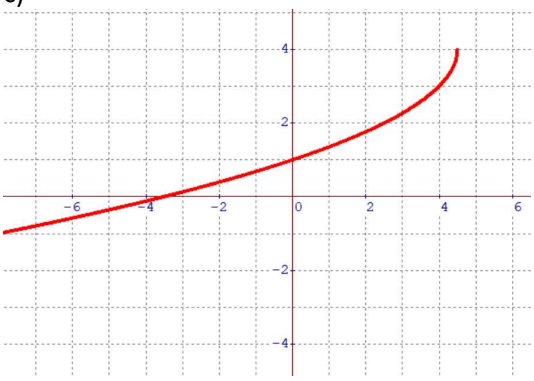
a)



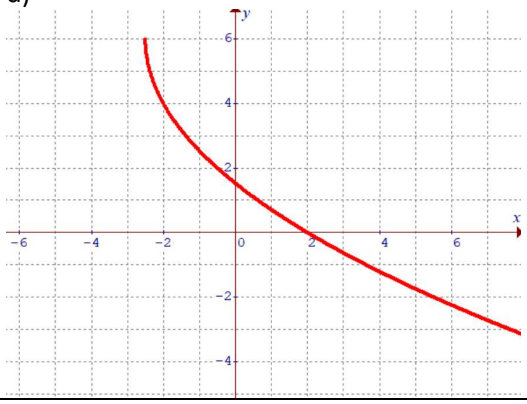
b)



c)



d)



8. Given the following radical functions, complete the table of values given. Give your answers accurate to atleast 2 decimal places:

a) $y = 3\sqrt{4+3x} - 10$

x	y
4	
20	
	98

b) $y = \frac{2}{3}\sqrt{4+6x} + 12$

x	y
0	
2	
	15

c) $y = -2\sqrt{5-3x} + 15$

x	y
3	
−5	
	20

d) $y = \frac{1}{9}\sqrt{2(x-4)} + 11$

x	y
5	
22	
	12

Name:_____ Date:_____

HW Pre Calculus 12 Section 2.2 Graphing the Square Root of a Function: $y = \sqrt{f(x)}$:

1. Given each of the following equations, indicate whether if there are any x-intercepts OR not. If there are, indicate how many and where they are:

a) $y = 3x - 8$	b) $y = \frac{2}{3}x + \frac{11}{5}$	c) $y = 3x^2 - 8$
d) $y = -2x^2 - 5$	e) $y = -2(x+4)^2 + 18$	f) $y = 0.5(x-4)^2 - 4.5$
g) $y = 4x^2 - 5x - 2$	h) $y = -3x^2 + 5x - 9$	I) $y = 7x^2 - 11x - 2$

2. When we take the square root of a function, which coordinate changes and which one will stay the same? Explain:

3. Suppose the coordinate (a,b) is on the function $y = f(x)$, where "b < 0", what will this coordinate become in the function $y = \sqrt{f(x)}$? Explain:

4. Suppose the coordinate (a,1) is on the function $y = f(x)$, what will this coordinate become in the function $y = \sqrt{f(x)}$? Explain:

5. When we perform the transformation from $y = f(x) \rightarrow y = \sqrt{f(x)}$, how are the "x" and "y" coordinated changed? Explain:

6. Match each equation with the corresponding graph:

i) $y = \sqrt{x^2 - 9}$

ii) $y = \sqrt{-x^2 + 9}$

iii) $y = -\sqrt{-x^2 + 9}$

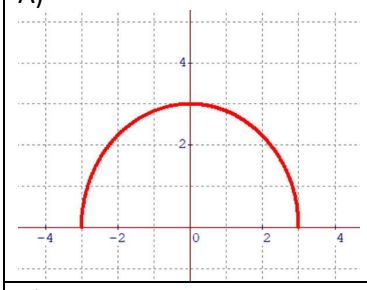
iv) $y = \sqrt{x^2 + 9}$

v) $y = \sqrt{2x^2 - 4}$

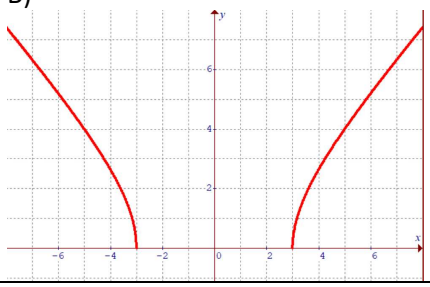
vi) $y = -\sqrt{2x^2 - 4}$

vii) $y = -2\sqrt{-x^2 - 9}$

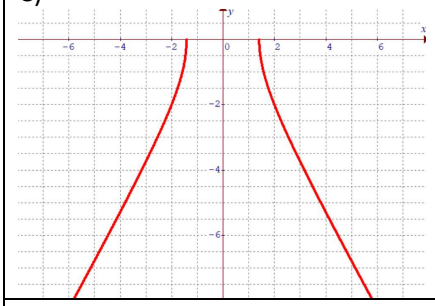
A)



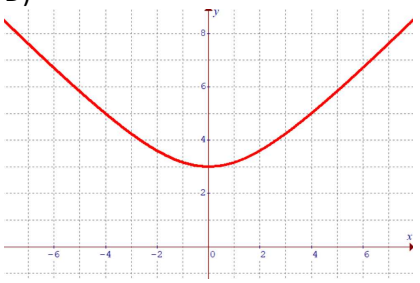
B)



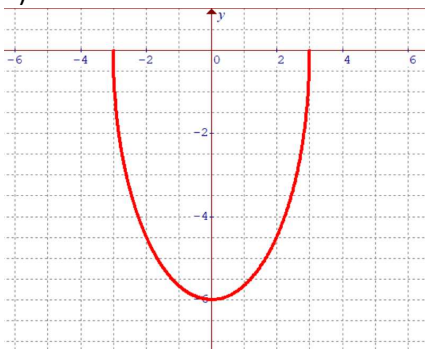
C)



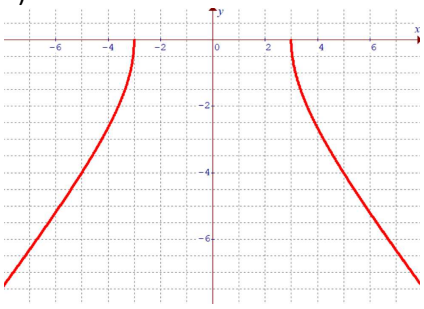
D)



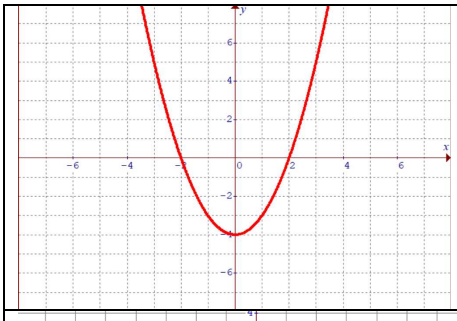
E)

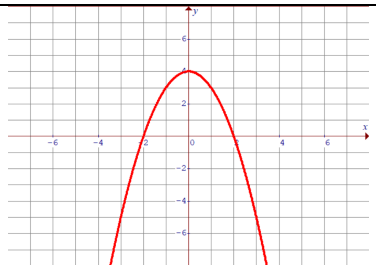


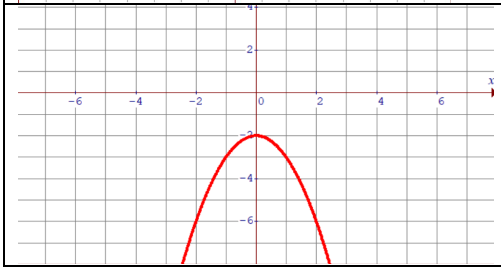
F)

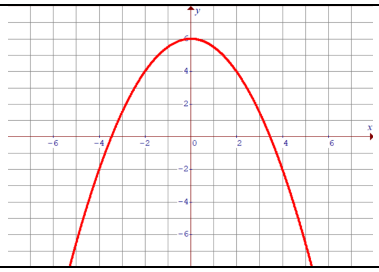


7. Given the graphs of $y = f(x)$, draw the graphs of $y = \sqrt{f(x)}$



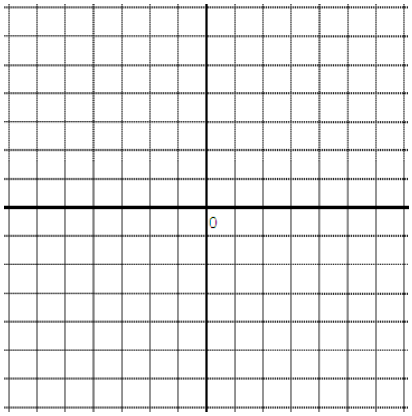




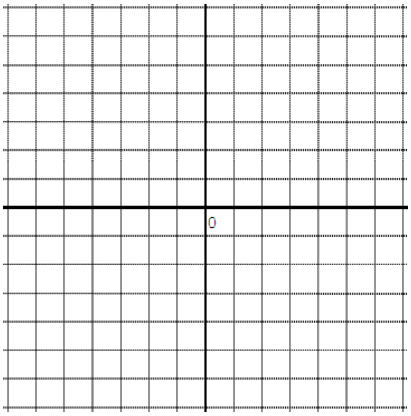


8. Graph the following and then determine the domain and range for each of the following functions. Show all your work and steps::

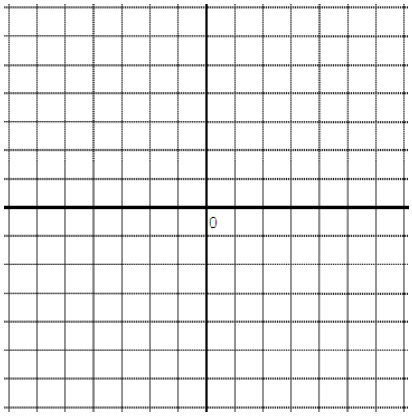
a) $y = \sqrt{x^2 - 6}$



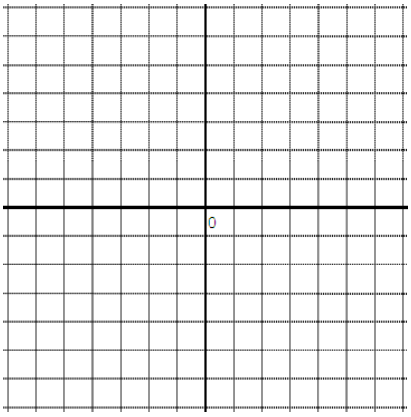
b) $y = \sqrt{x^2 - 9}$



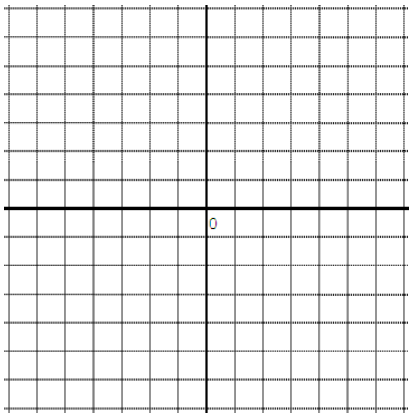
c) $y = \sqrt{-x^2 + 9}$



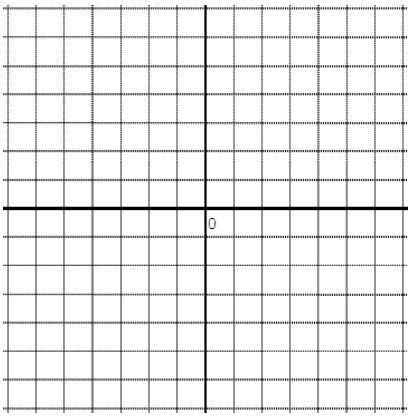
d) $y = \sqrt{-x^2 + 16}$



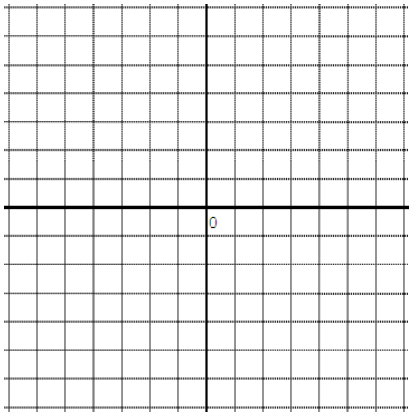
e) $y=\sqrt{(x-2)^2+4}$



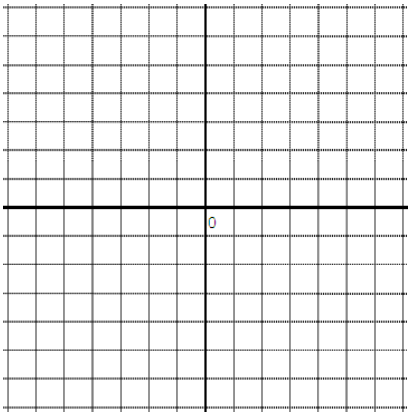
f) $y=\sqrt{2(x+3)^2+6}$



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



h) $y=-\sqrt{3x^2+12x-15}$



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HW Pre Calculus 12 Section 2.2 Graphing $y = \sqrt{f(x)}$

1. Suppose the coordinate (a,b) is on the function $y = f(x)$, what is this coordinate on $y = \sqrt{f(x)}$?

2. When taking the reciprocal of a function, what happens to all the points where the y-coordinate is negative? Explain:

3. Do the x-coordinates of a function change when you take the square root of the function? Explain:

4. When you take the square root of a linear function, what does the function become? Explain:

5. When you take the square root of a quadratic function, what does the function become? Explain:

6. How do I know whether if the square root of a quadratic function will become either a semi circle or a semi hyperbola? Explain:

7. What is a vertical and horizontal hyperbola?

8. Graph the following and then determine the domain and range for each of the following functions:

a) $y=\sqrt{x^2-6}$	b) $y=\sqrt{x^2+6}$
c) $y=\sqrt{-x^2+9}$	d) $y=\sqrt{-x^2+16}$
e) $y=\sqrt{(x-2)^2-25}$	f) $y=\sqrt{2(x+3)^2-18}$
g) $y=\sqrt{-2(x+3)^2+8}$	h) $y=\sqrt{3x^2+12x-15}$

Indicate the transformations in order for each of the following: Then indicate how the coordinates (a,b) will change after each transformation:

a) $x=-f(y)$	b) $-x=-f(y)$

c) $-x+1=f\left(2-y\right)$	d) $4-x=f\left(3-y\right)$

9.