Name:_____ Date:_____

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.