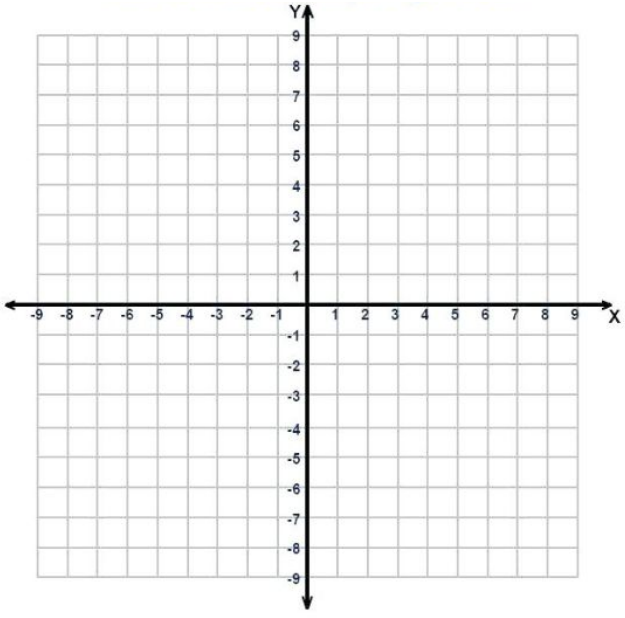
CW#____ Name:_____

Periods: A1 A2 A3 B1 B3

5.2.1 How can I undo an exponential function?

The Inverse of an Exponential Function

#53 THE INVERSE EXPONENTIAL FUNCTION		
a. Make a table for $y = 3^x$.	b. Make a table for the inverse of $y = 3^x$.	d. If the input for the inverse function is 81, what is the output? Explain your reasoning.
c. Sketch a graph of the inverse of $y = 3^x$. 		e. Using your answers from parts (a) through (c), if you input any number for x into the inverse function, how can you describe the output?

#54 AN ANCIENT PUZZLE

Here are some clues to help you figure out how the puzzle works:

$\log_2(8) = 3$ $\log_3(27) = 3$

$\log_5(25) = 2$ $\log_{10}(10{,}000) = 4$

Use the clues to determine the missing pieces of the puzzles below:

a. $\log_2(16) = ?$	b. $\log_2(32) = ?$
c. $\log_?(100) = 2$	d. $\log_5(?) = 3$
e. $\log_?(81) = 4$	f. $\log_{100}(10) = ?$

Write the exponential form to the logs you solved in problem #54	
a.	b.
c.	d.
e.	f.

#55 How is the Ancient Puzzle related to the inverse function for $y = 3^x$ in problem 5-53? Show how you can use the idea in the Ancient Puzzle to write an equation in $y =$ form for the inverse function of $y = 3^x$.