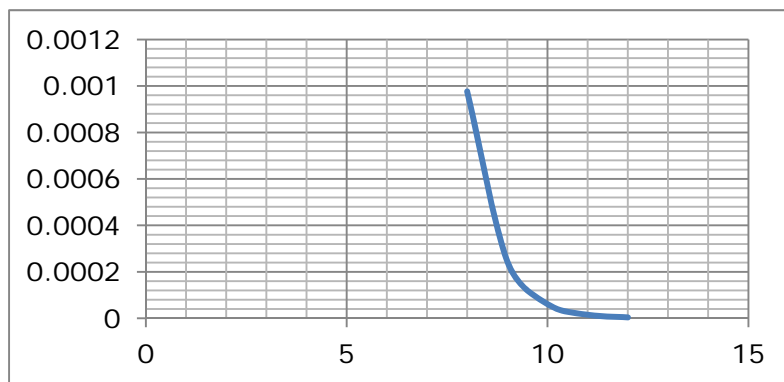


### Graphing Exponential and Logarithmic Functions - Guided Lesson Explanation

#### Explanation#1

At first looks like  $4^{2-x}$  should reflect across the y-axis since x is negative. However, the graph tells a different story. Rewriting  $f(x)$ , we get  $4^{2-x} = 4^{-x+2} = 4^{-(x-2)}$ . Therefore,  $f(x)$  actually shifts horizontally to the right 2 units, and then reflects across the vertical line  $x=2$ .

x	$4^{-x+2}$	(x, y)
8	$\frac{977}{1000000}$	(5, 0.000977)
9	$\frac{61}{250000}$	(6, 0.000244)
10	$\frac{1227}{2000}$	(7, 6.1035)
11	$\frac{7629}{5000}$	(8, 1.52588)
12	$\frac{38147}{10000}$	(9, 3.8147)

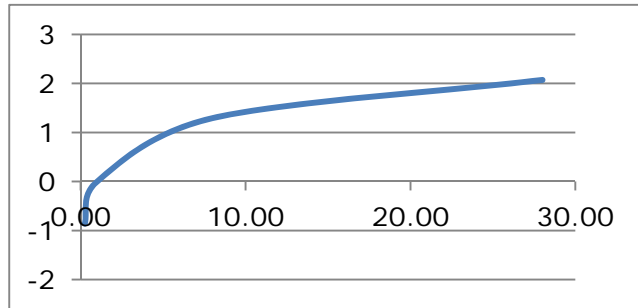


Name \_\_\_\_\_

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**Explanation#2**

$x=4^y$	$y$	$(x, y)$
0.25	-0.86	(0.25 , -0.86)
1	0	(1 , 0)
8	1.29	(8 , 1.29)
28	2.07	(28 , 2.07)

**Explanation#3**

$x=7^y$	$y$	$(x, y)$
0.15	-1.17	(0.15 , -1.17)
2	0.43	(2, 0.43)
10	1.43	(10 , 1.43)
25	2	(25 , 2)

