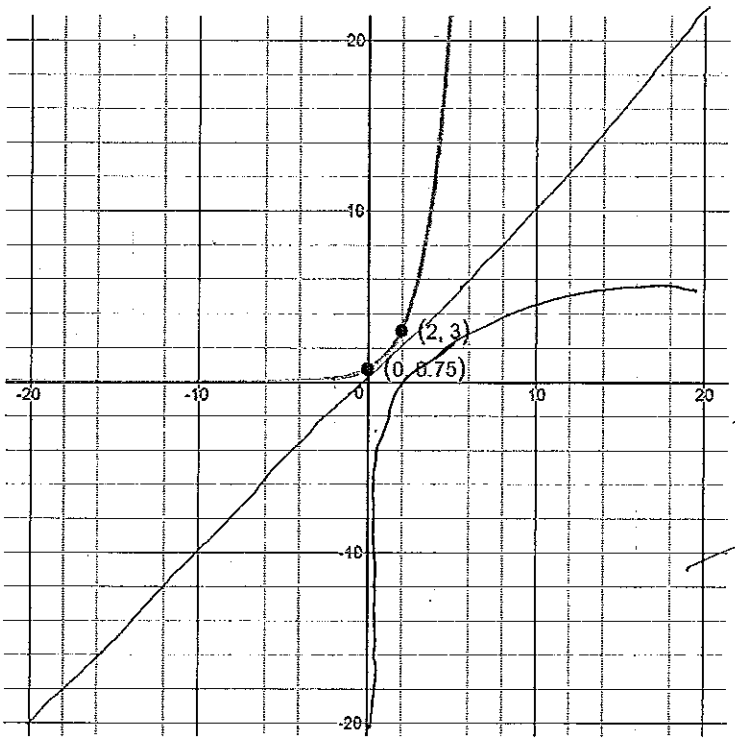
Name:_____ Pd:_____

Multiple Representations of Logarithmic and Exponential Functions

1. A. Is this graph exponential or logarithmic? Explain how you know:



Exponential b/c the rate of growth is increasing.

Slope increases as x does, y values are multiplying

3 ÷ .75 = 4 $\sqrt{4}$ = 2

B. Use the points on the graph to fill in the table

x	0	1	2	3	4
y=f(x)	.75	1.5	3	6	12

C. Use the table of the function to create a table of its inverse

x	.75	1.5	3	6	12
$y=f^{-1}(x)$	0	1	2	3	4

D. Use your inverse table to graph the inverse function on the same coordinate plane as the original function

E. Write a rule for the original function. Verify that it works for ≥ 1 point from your table.

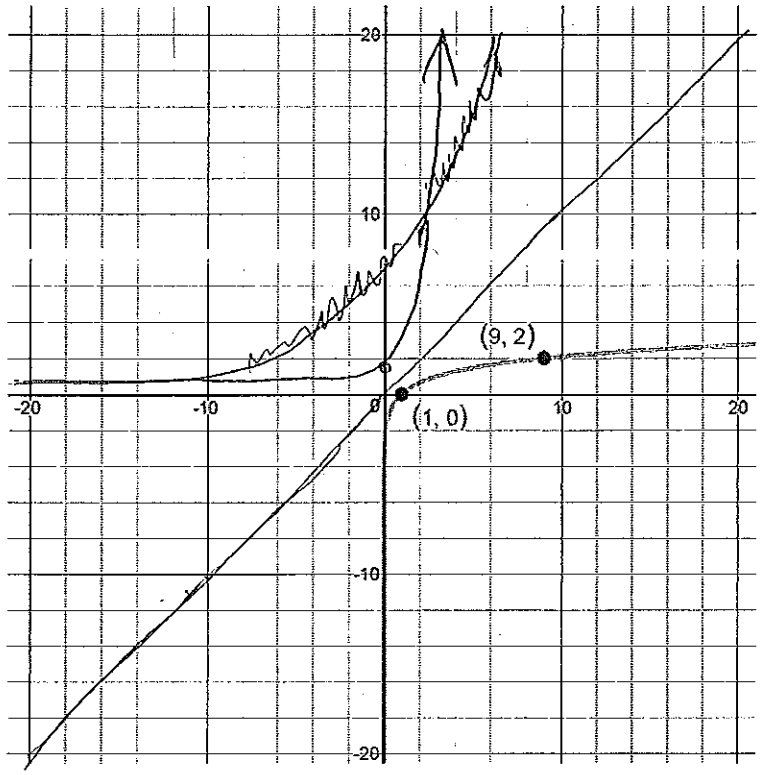
$y = .75 \cdot 2^x$

1) 2^x
2) .75

F. Write a rule for the inverse function. Verify that it works for ≥ 1 point from your table.

$\log_2\left(\frac{x}{.75}\right)$

2. A. Is this graph exponential or logarithmic? Explain how you know:



Logarithmic. The x-values are getting farther apart and the y values are increasing slower.

B. Use the points on the graph to fill in the table

x	1	3	9	27	81
y=f(x)	0	1	2	3	4

C. Use the table of the function to create a table of its inverse

x	0	1	2	3	4
$y=f^{-1}(x)$	1	3	9	27	81

D. Use your inverse table to graph the inverse function on the same coordinate plane as the original function. Draw the line of symmetry.

E. Write a rule for the original function. Verify that it works for ≥ 1 point from your table.

$\log_3 x = y$

F. Write a rule for the inverse function. Verify that it works for ≥ 1 point from your table.

$3^x = y$