

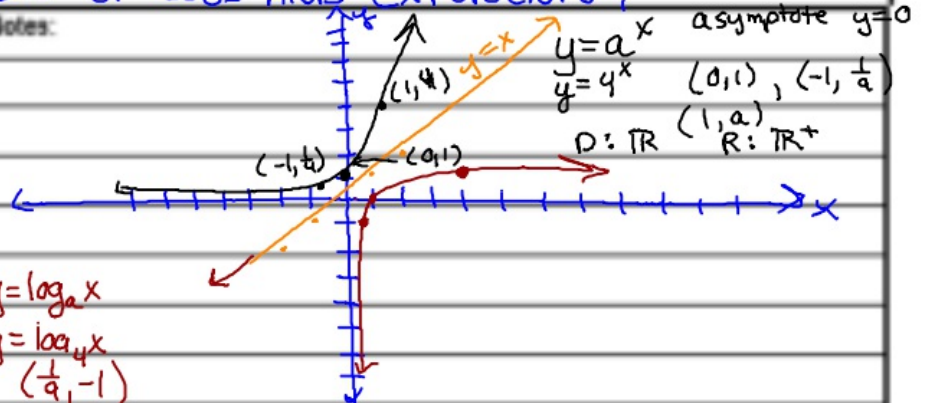


Essential Question:

How CAN WE COMPARE THE GRAPHS OF LOGS AND EXPONENTS?

Questions:

Notes:

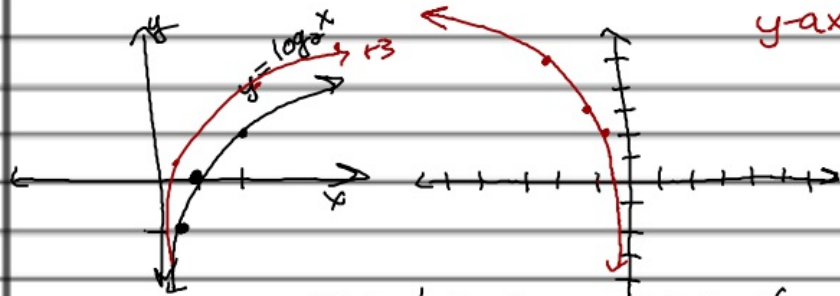


$y = \log_a x$
 $y = \log_4 x$
 $(\frac{1}{a}, -1)$
 $(a, 1)$ asymptote at $x=0$ (y-axis)
 $(1, 0)$ vertical
 D: \mathbb{R}^+ R: \mathbb{R}

TRANSFORMATIONS

Ex 11 GRAPH $g(x) = 3 + \log_2(-x)$

↑ 3 reflected over y-axis



original point	Transformed
$(\frac{1}{2}, -1)$	$(-\frac{1}{2}, 2)$
$(1, 0)$	$(-1, 3)$
$(2, 1)$	$(-2, 4)$

Questions:

* $\log a$ means $\log_{10} a$

Notes:

EX 2) GRAPH $y = -2 \log(x-1)$

vert reflect over x-axis

stretch vertically by -2

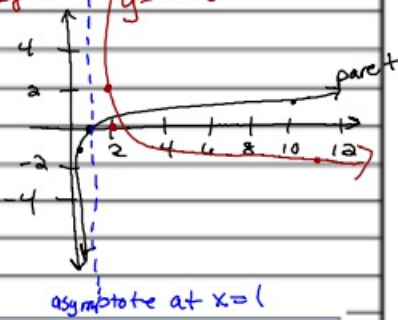
shift right 1 unit

Pts	$\log x$	y
$\frac{1}{10}$	-1	
1	0	0
10	1	

Pts	$y = -2 \log(x-1)$
$\frac{1}{10}$	2
1	0
10	-2

add 1 to x

multiply y by -2



Steps for Multiple Transformations

Use the following order to graph a function involving more than one transformation:

1. Horizontal Translation
2. Stretching or shrinking
3. Reflecting
4. Vertical Translation

HWJ p. 119 #1, 3, 4