

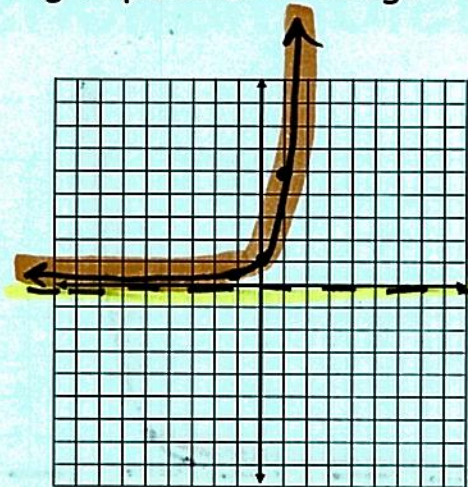
Precal Graphing Exponentials and Logs

INVERSES

Math →
Alpha →
Math

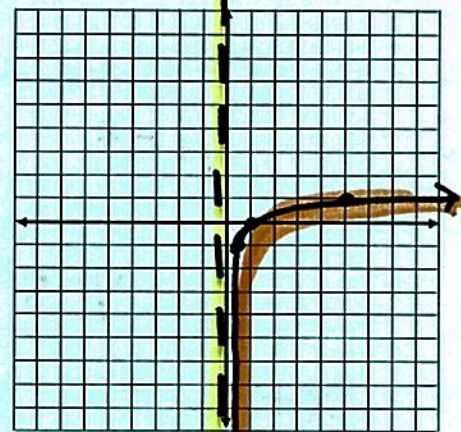
$$y = 5^x$$

x	y
-1	0.2
0	1
1	5



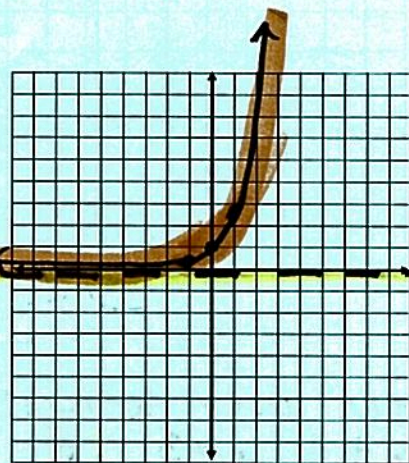
$$y = \log_5 x$$

x	y
0.2	-1
1	0
5	1



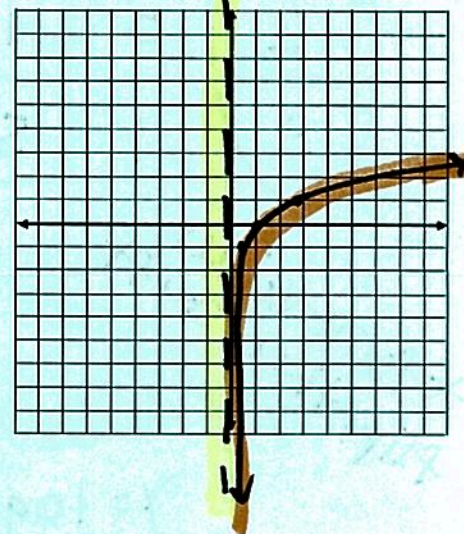
$$y = e^x$$

x	y
-1	0.3678
0	1
1	2.7183



$$y = \ln x$$

x	y
0.36	-1
1	0
2.71	1



Exponential

$$y = b^x$$

D: $(-\infty, \infty)$ or \mathbb{R}

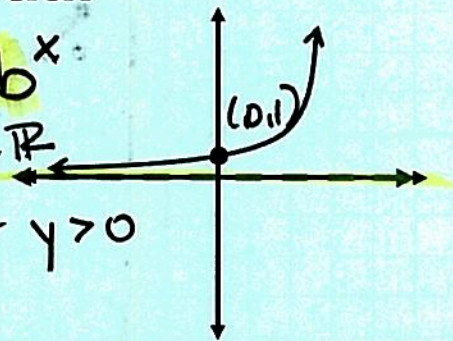
R: $(0, \infty)$ or $y > 0$

HA: $y = 0$

Y-int: $(0, 1)$

$b > 1$ = growth

$0 < b < 1$ = decay



Logarithmic

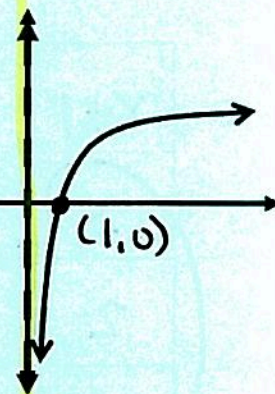
$$y = \log_b x$$

D: $(0, \infty)$ or $x > 0$

R: $(-\infty, \infty)$ or \mathbb{R}

VA: $x = 0$

X-int: $(1, 0)$



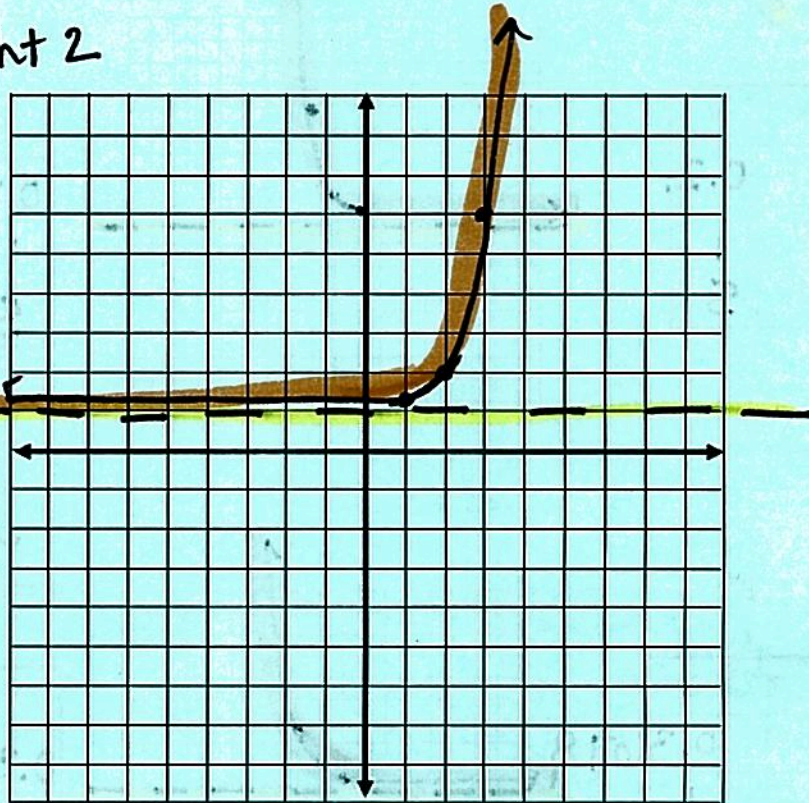
Graphing Transformations

$$y = 5^{x-2} + 1$$

Right 2
up 1

$$y = 5^x$$

$y = 5^x$			
$x+2$	x	y	$y+1$
1	-1	0.2	1.2
2	0	1	2
3	1	5	6



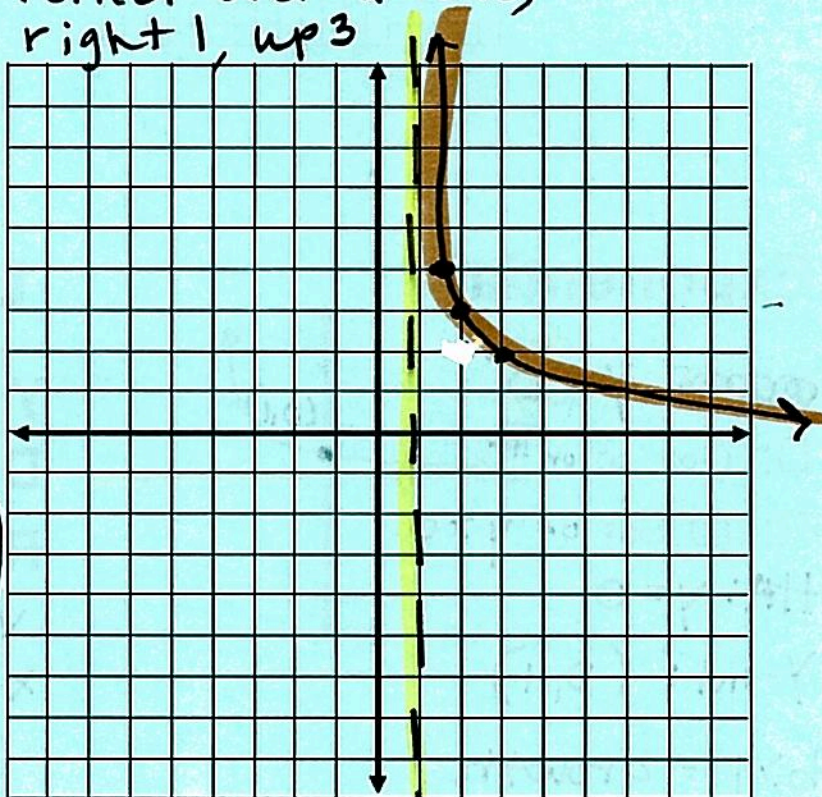
* for y values
flip, then shift

$$y = -\log_2(x-1) + 3$$

$$y = \log_2(x)$$

reflect over x-axis,
right 1, up 3

$y = \log_2(x)$			
$x+1$	x	y	$-y+3$
1.5	0.5	-1	4
2	1	0	3
3	2	1	2



Inverse of $\log_2(x)$ $\rightarrow y = 2^x$

x	y
-1	0.5
0	1
1	2