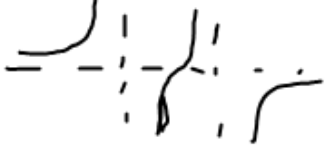
Graphs of Exponential and Logarithmic Functions

How are the graphs of an exponential and logarithmic function related?

How can we graph logarithmic functions?

Graph the following equation:

$$y = 2^x$$



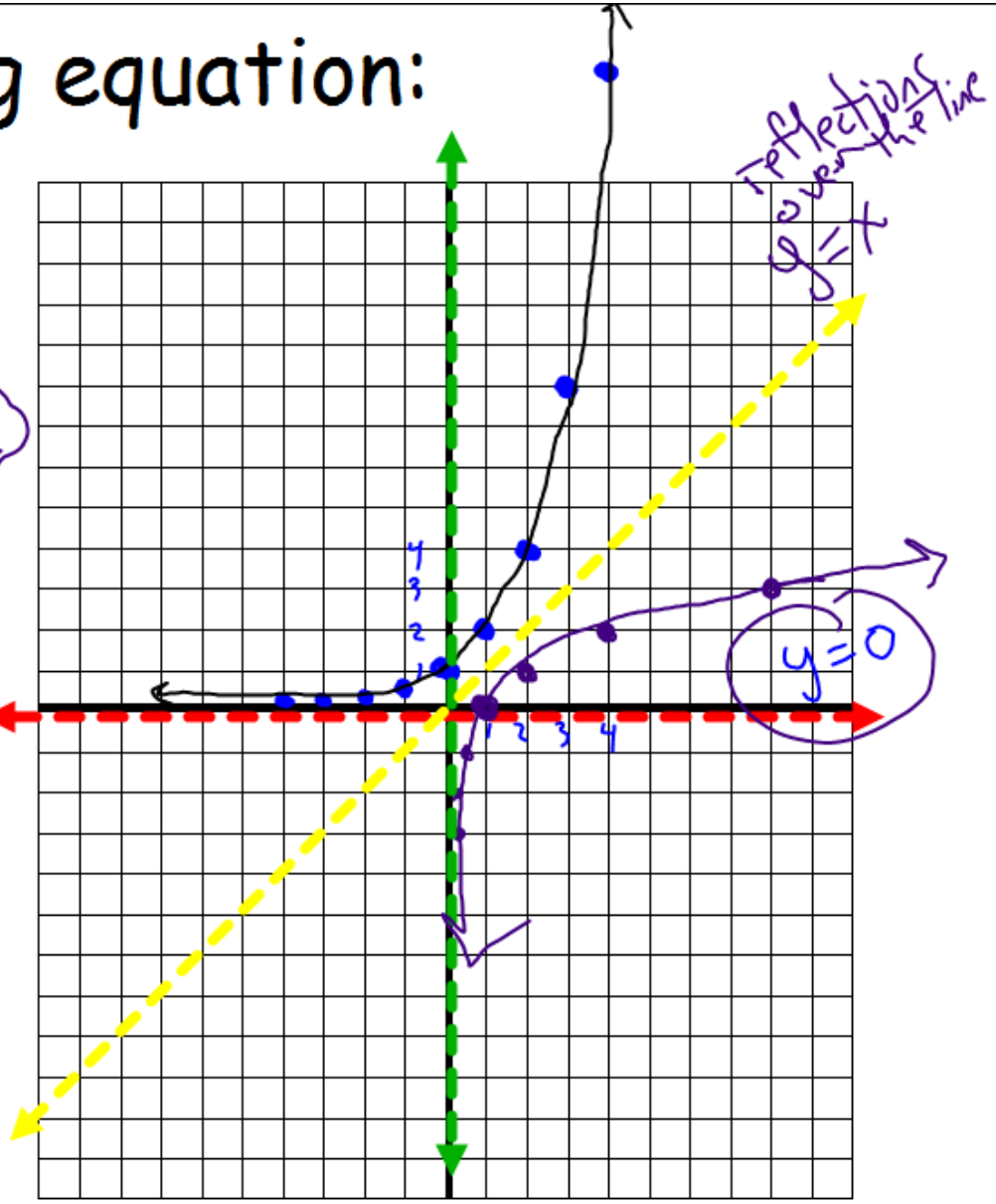
-4	1/16
-3	1/8
-2	1/4
-1	1/2
0	1
1	2
2	4
3	8
4	16
5	32

$1 = 2^0$

$2 = 2^1$

$4 = 2^2$

$\frac{1}{2^1} = 2^{-1}$



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Graph the following function:

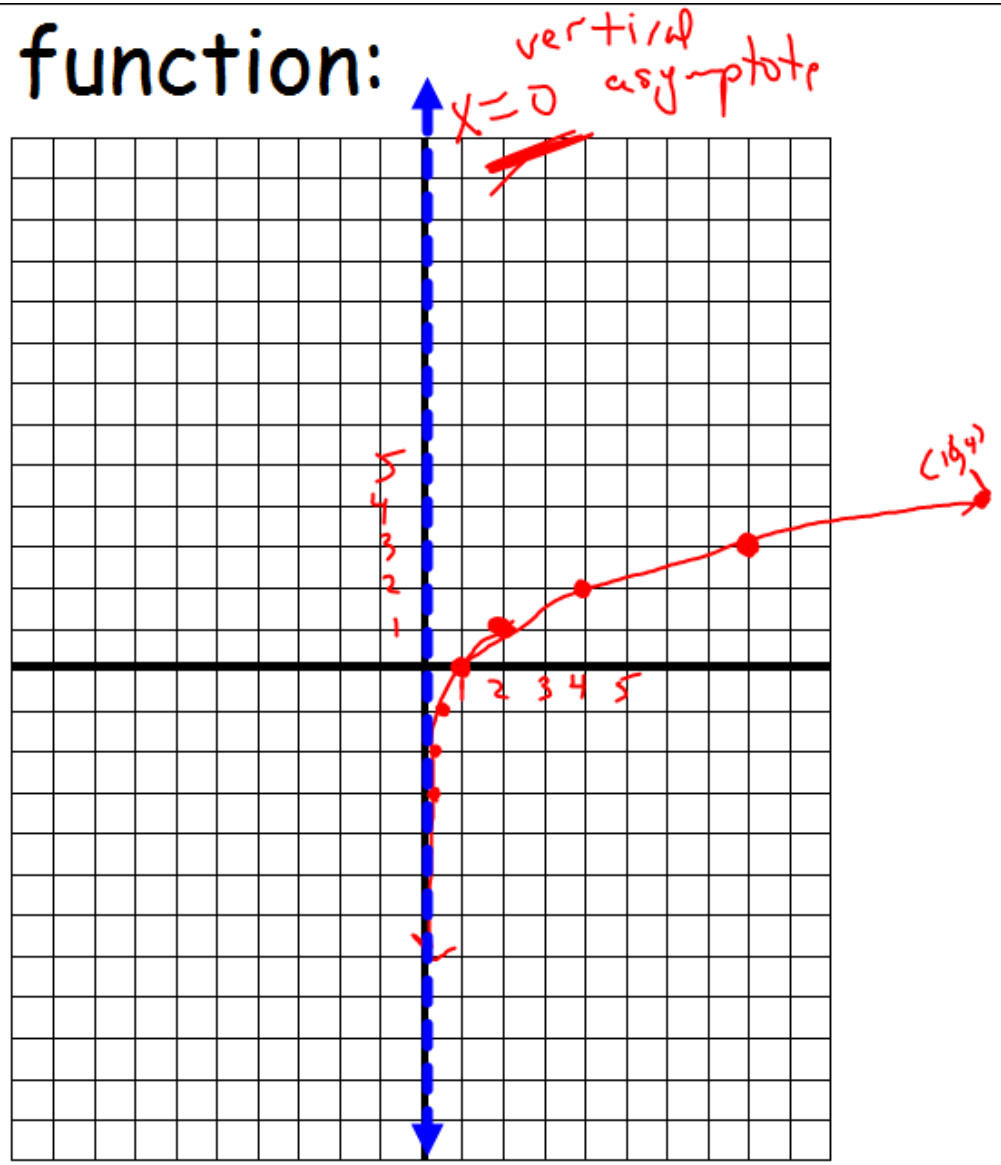
$y = \log_2 x$

$2^y = x$

x	y
1/8	-3
1/4	-2
1/2	-1
* 1	0
2	1
4	2
8	3
16	4

$2^0 = 1$

$2^1 = 2$



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Compare and contrast your graphs.

How are they similar and how are they different?

Graph the following equation:

$$y = 3^x$$

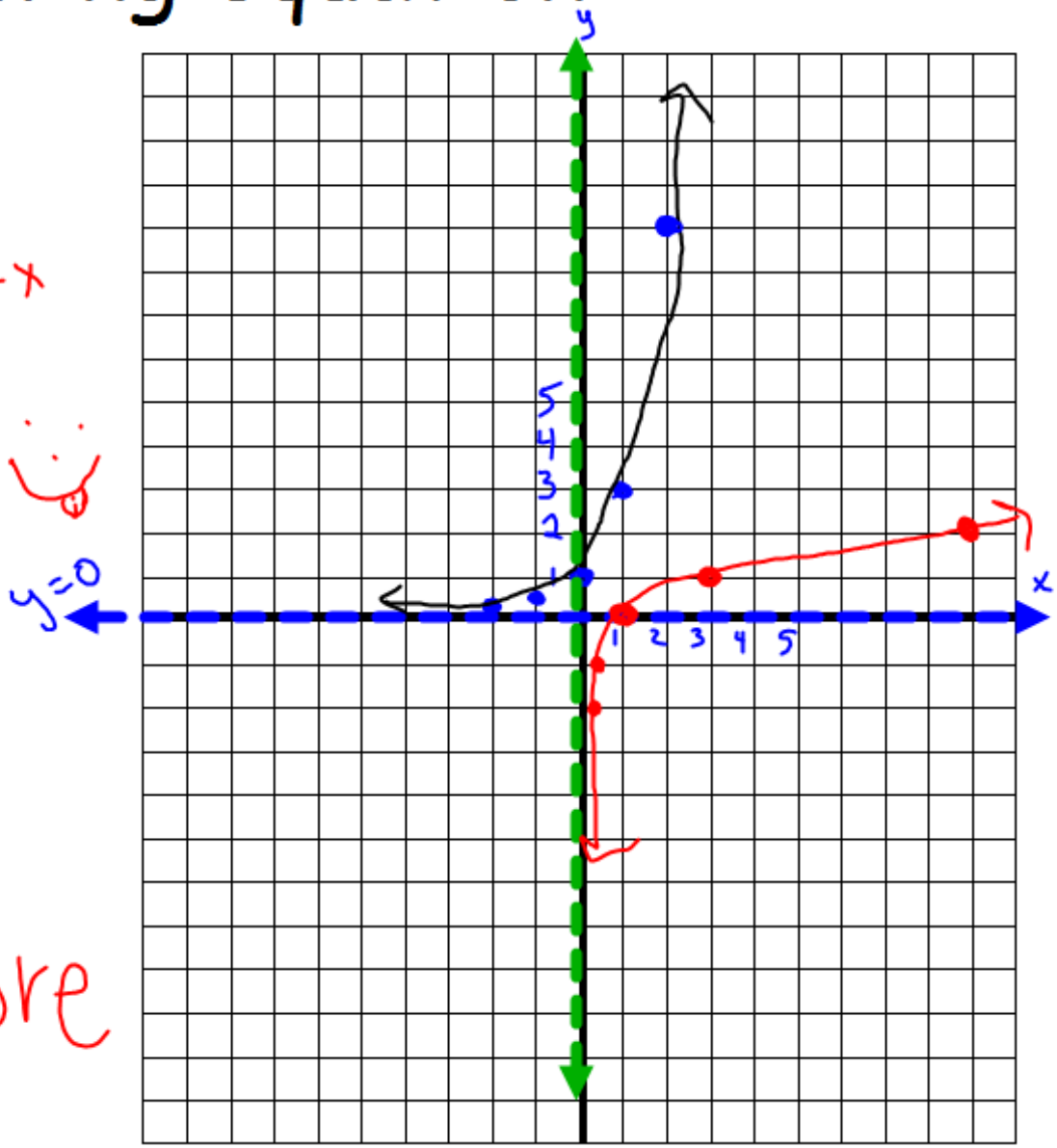
$y = \log_3 x$

$3^y = x$

x	y
-2	1/9
-1	1/3
0	1
1	3
2	9

x	y
1/9	-2
1/3	-1
1	0
3	1
9	2

Plenty More work



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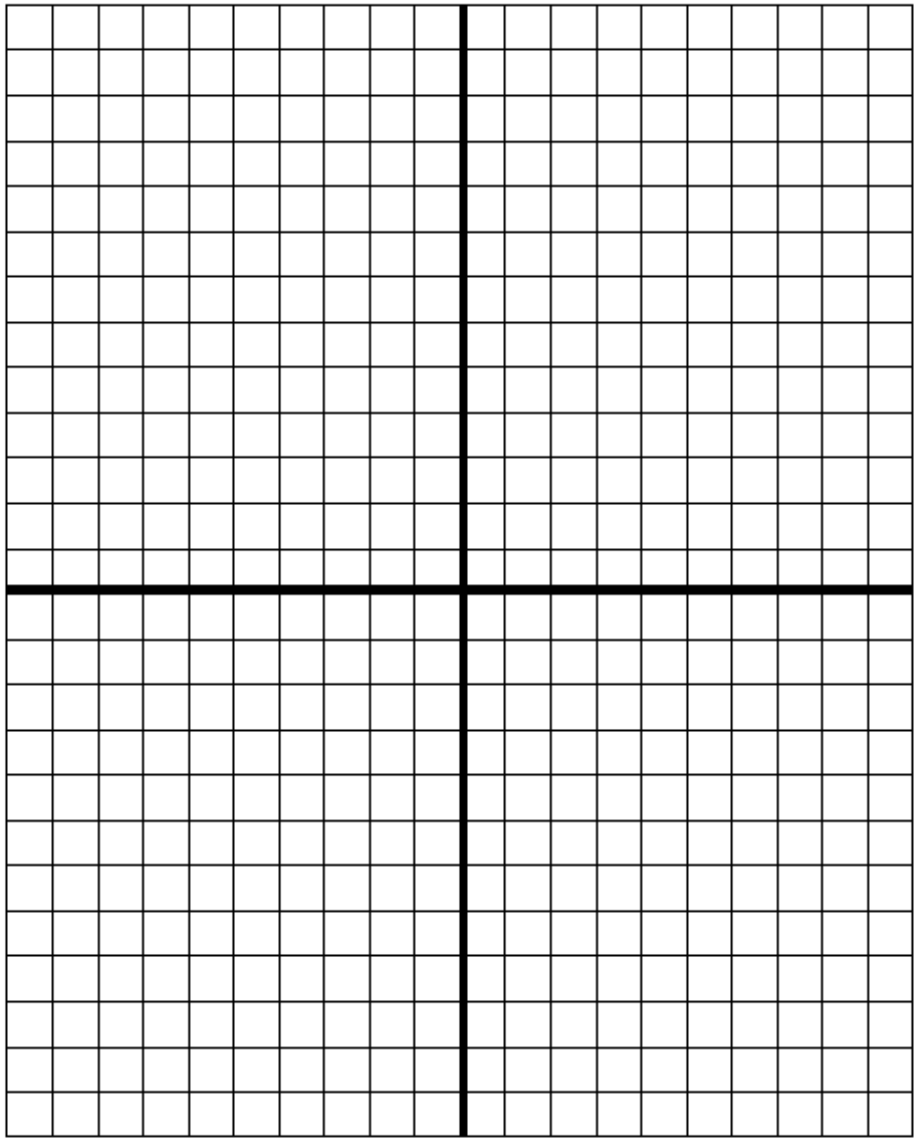
Graph the following equation:

$$y = \log_3(x)$$



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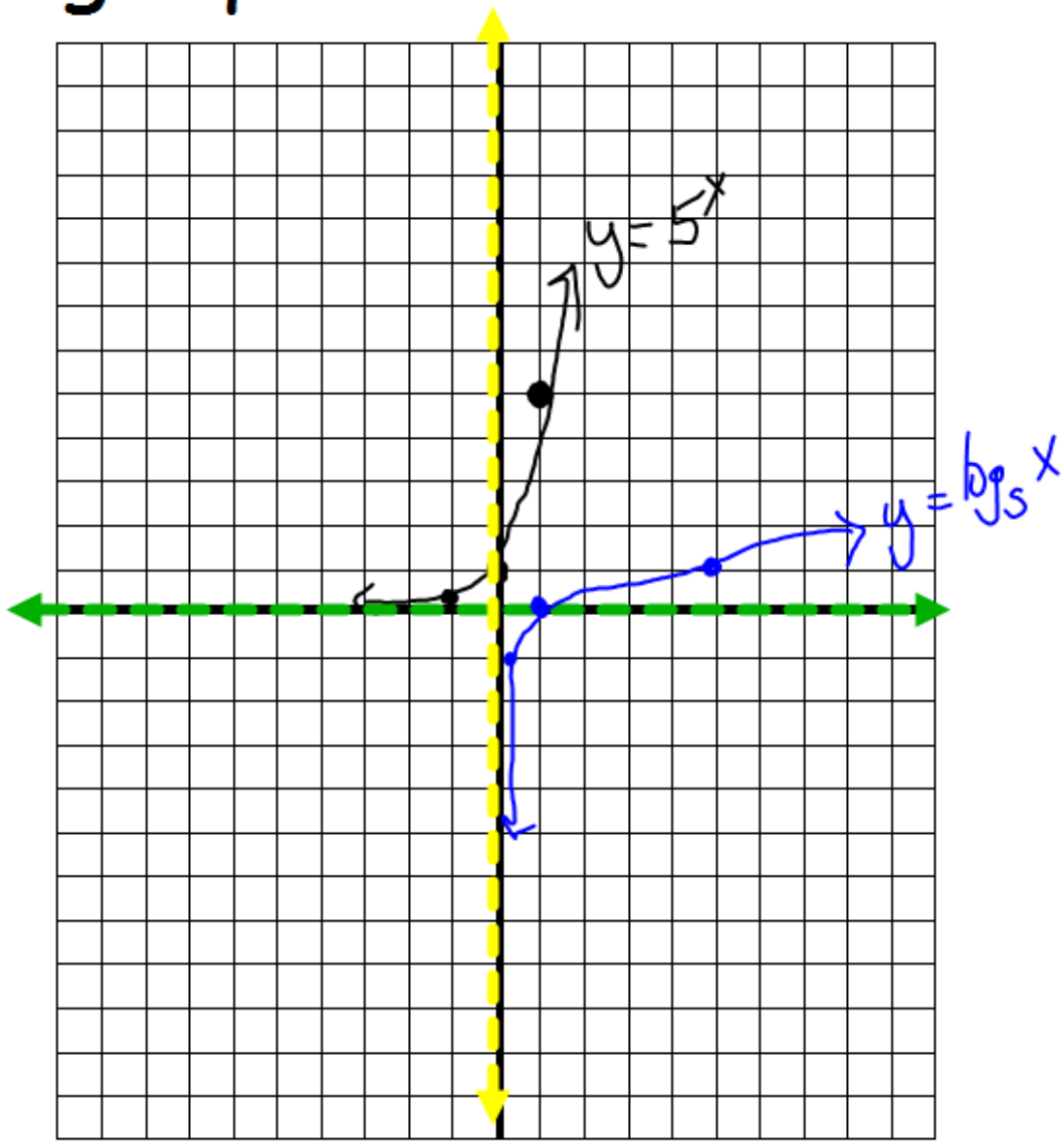
Graph the following equation:

$$y = 5^x$$

$y = \log_5 x$

x	y
-1	1/5
0	1
1	5

x	y
1/5	-1
1	0
5	1



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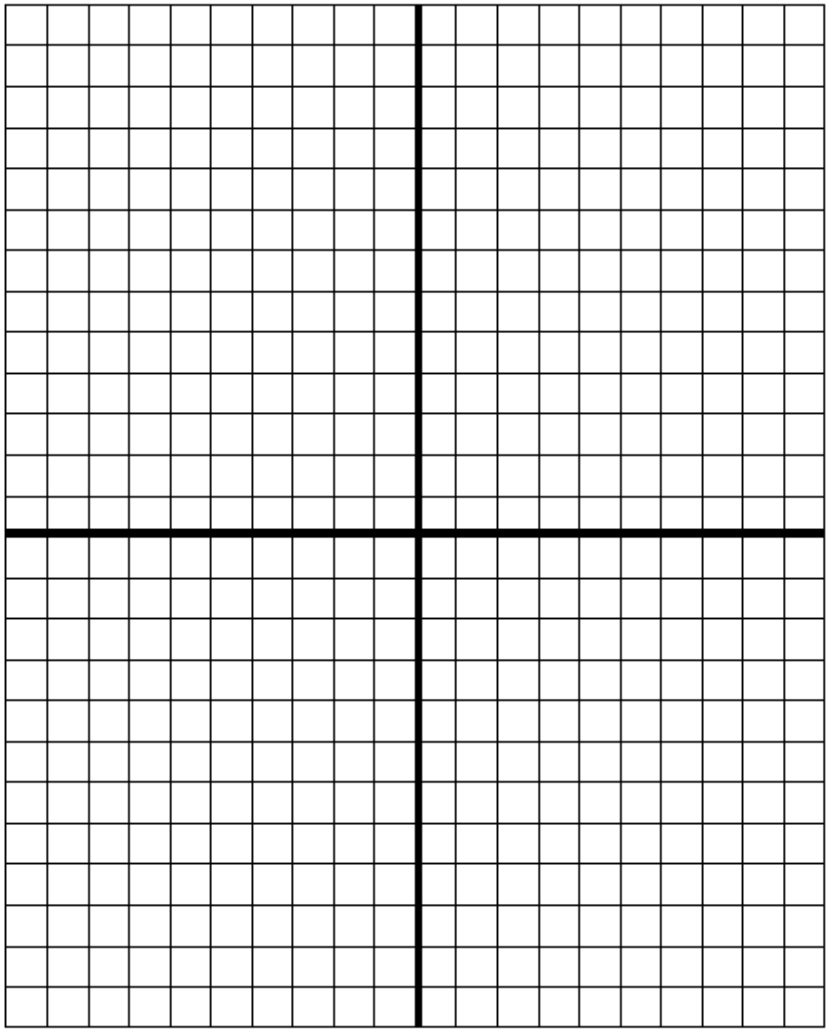
Graph the following function:

$$y = \log_5 x$$



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Classwork:

Graphing Logs WS