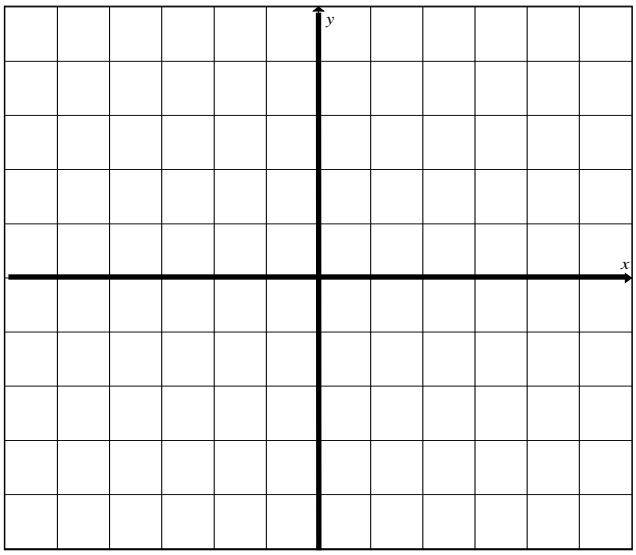
Graphing Logarithmic Functions

Steps:
1. Put into exponential form
2. Use a table of values (for the basic graph) and transformations

Graph each of the following on the same grid:

a) $y = 2^x$

x	y



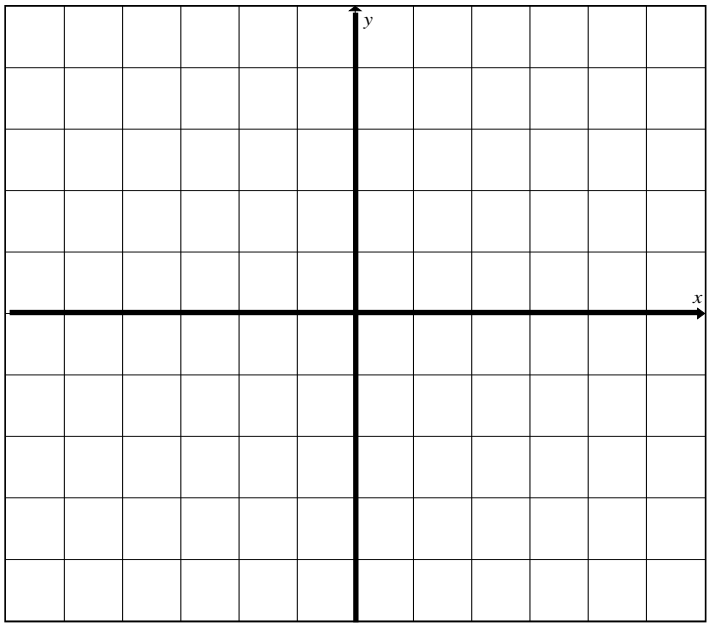
b) $x = 2^y$

x	y

Example – Bases > 1

Graph: $y = log_3 x$

x	y



Properties:

Domain:

Range:

Real zero(es):

y-intercept:

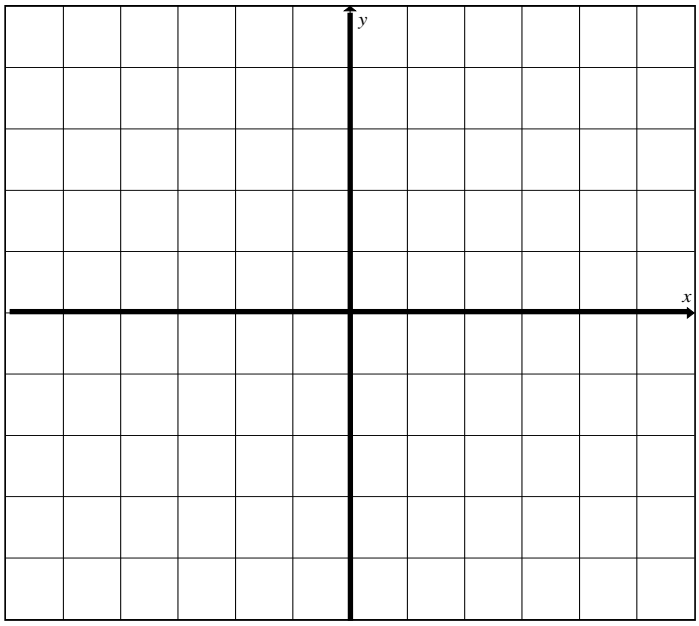
Asymptote:

Increasing or Decreasing:

Example – Bases between 0 and 1 ($0 < b < 1$)

Graph: $y = log_{\frac{1}{2}} x$

x	y



Properties:

Domain:

Range:

Real zero(es):

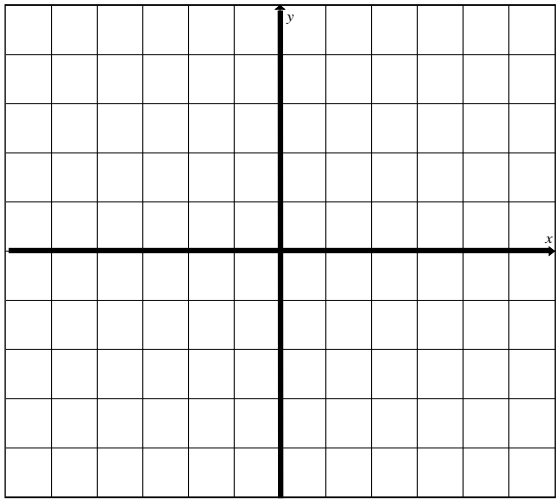
y-intercept:

Asymptote:

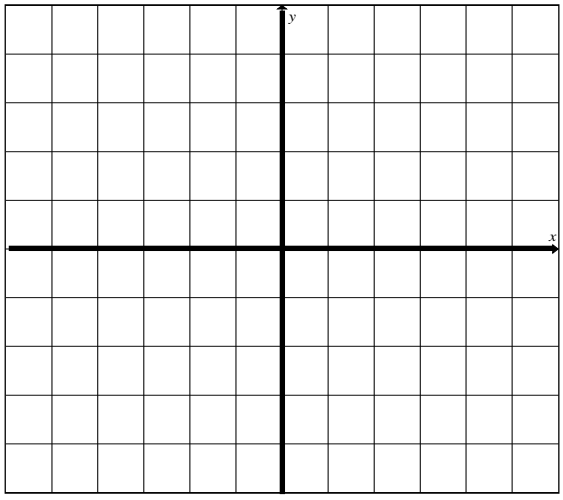
Increasing or Decreasing:

Graphing Logs Using Transformations

a) Graph: $y = -log_3(x + 2)$



b) $y = -log_{\frac{1}{2}}x$



c) $y = log_3\left(\frac{1}{2}x\right) + 2$