I can graph exponential and Logarithmic equations 1/10

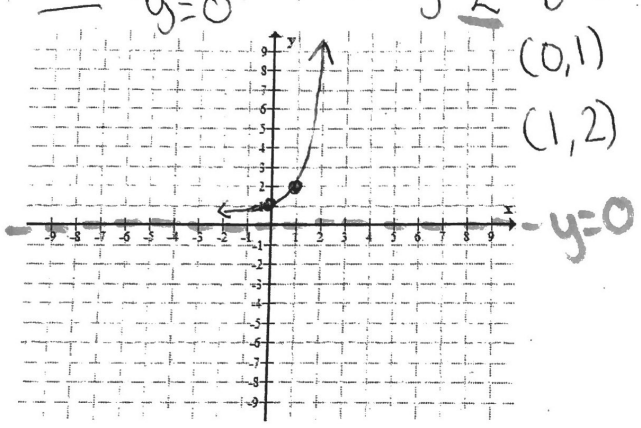
Exponential Equations

Parent: $y = b^x$ $y=k$

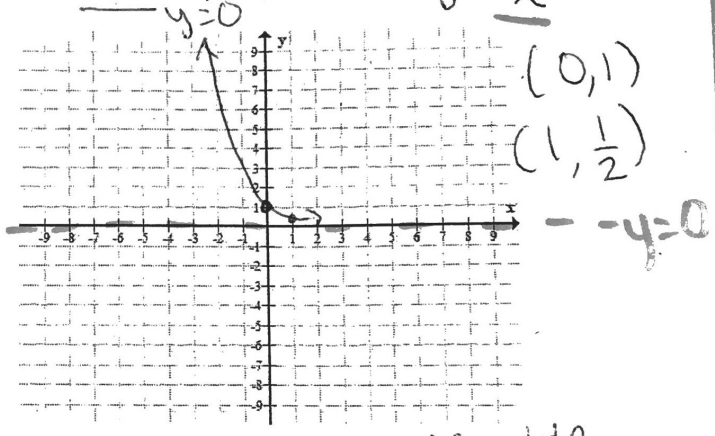
2 key points
(0,1) (1,b)

b = change $b>1$ Growth $0<b<1$ Decay

Parent Growth Graph Equation : $y=2^x$ $b=2$



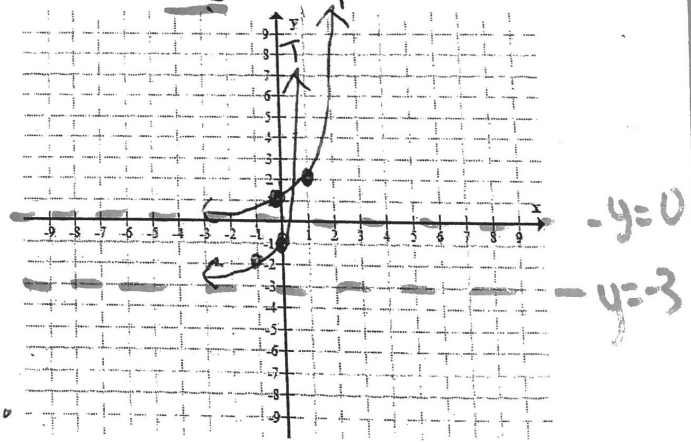
Parent Decay Graph Equation: $y=\frac{1}{2}^x$ $b=\frac{1}{2}$



Transformed Equation and steps

$y = b^{(x-h)} + k$ $y=k$ (0,1) (1,b)

$y = 2^{(x+1)} - 3$ asymptote $y=-3$



1.) Graph parent: $y=2^x$ (0,1) (1,2)

2.) Growth or Decay? Growth

3.) Asymptote for Transformed Equ. $y=-3$

4.) Identify Transformation: Left 1 and down 3

5.) move (0,1) and (1,b) by Transformation

Logarithmic Equations $y = \log_b x$

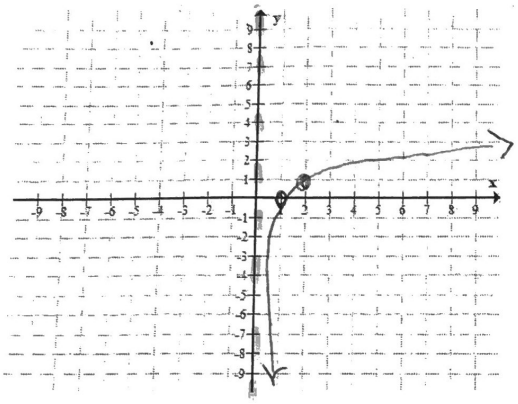
Parent:

b = growth or decay (don't really see)

X=h asymptote

(1,0) (b,1)

Parent Graph Equation



$y = \log_2 x$

(1,0) (2,1)

X=0

do opposite for asymptote

Transformed Equation and steps (1,0) (3,1)

$y = \log_3(x+2) - 1$

1.) Graph parent: $y = \log_3 x$

2.) asymptote X=h

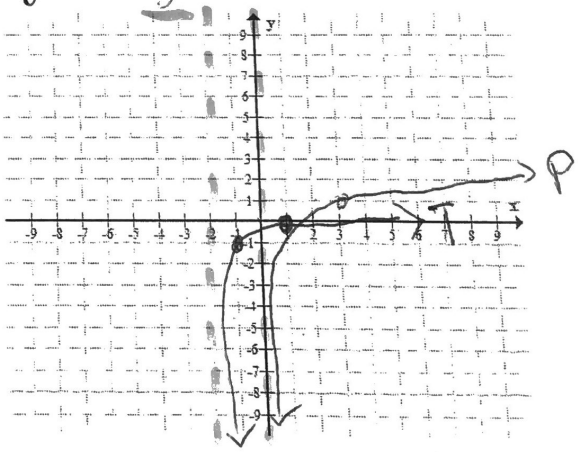
X=-2

3.) Transformation

L2, D1

Left 2 down 1

4.) move (1,0) and (b,1) by Transformation



y=-2