$\log_4 16 = \frac{\log 16}{\log 4} =$

$\ln(5x) = \ln_e(5x)$

$\log(5) = \log_{10}(5)$

LT AA4 Cheat Sheet

Name: _____

Logs to Exponentials

$\log_5 x = 15$

$\log_5 \rightarrow$ (5 ↑ 15)

$x = 5^{15}$

Exponentials to Logs

$3^x = 14$

$3^x \downarrow \rightarrow$

$x = \log_3 14$

Solving for x in Exponential Equation

$2 \cdot 3^{x+4} - 5 = 11$

$+5 \quad +5$

$\frac{2}{2} \cdot 3^{x+4} = \frac{16}{2}$

$3^{x+4} = 8$

$3^{x+4} \downarrow \rightarrow$

$x+4 = \log_3 8$

$x+4 = \frac{\log 8}{\log 3}$

$x+4 = 1.89$

$-4 \quad -4$

$x = -2.11$

Solving for x in Logarithmic Equation

$\log_2(4x) + \log_2(5) = 5$

$\log_2(20x) = 5$

$\log_2 \rightarrow$ (5 ↑ 2^5)

$20x = 2^5$

$20x = 32$

$\frac{20x}{20} = \frac{32}{20}$

$x = 1.6$

$0 < b < 1$ decay $b > 1$ growth

Parent: $y = b^x$

$(x-h)$ right (h is positive)

$(x+h)$ Left (h is negative)

LT AA4 Cheat Sheet

Name: _____

Parent $y = \log_b x$

Transformation of Exponential Graphs

$$y = b^{x-h} + k$$

(up/down)

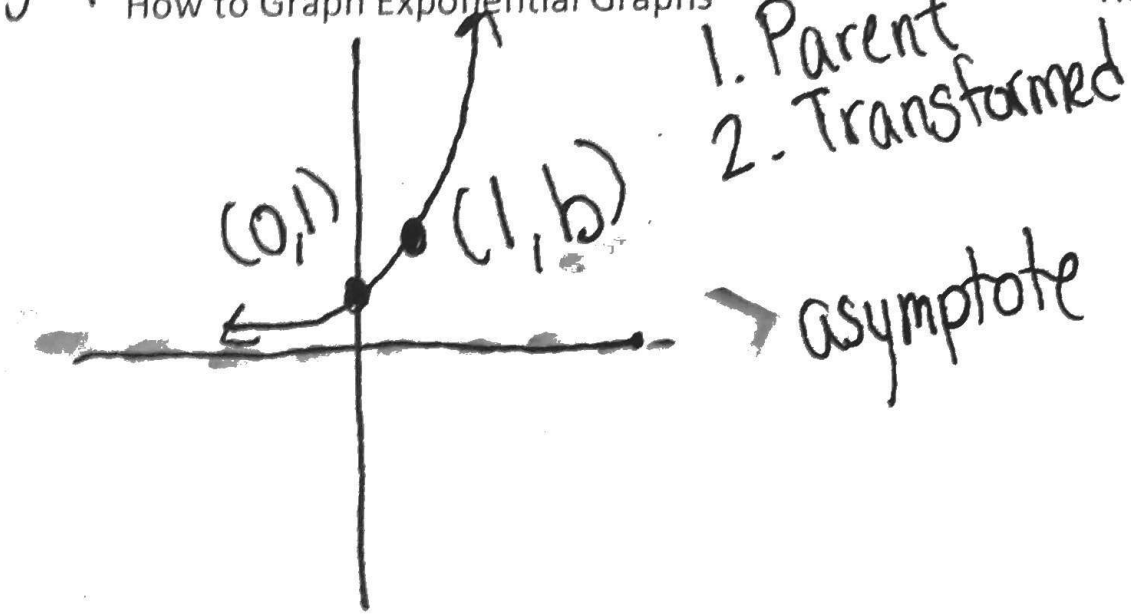
asymptote $y = k$ ⟷

Transformation of Logarithmic Graphs

$$y = \log_b (x-h) + k$$

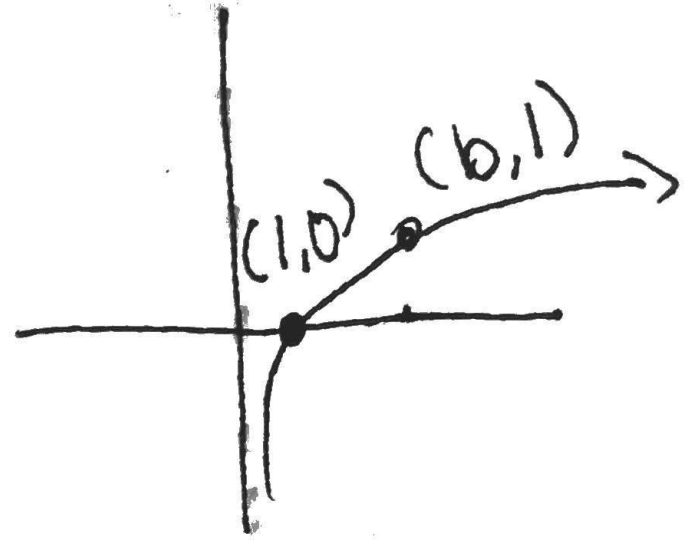
$x = h$ asymptote ↕

How to Graph Exponential Graphs



1. Parent
2. Transformed

How to Graph Logarithmic Graphs



asymptote