

Graphing Exponential and Logarithmic Function with TI-84

Lesson 098 | Algebra II | Exponential functions and models • Logarithms and their properties

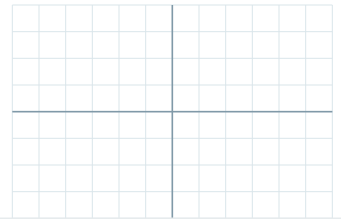
<https://www.youtube.com/watch?v=4-cWMZnuejA>

Original practice aligned to the saved video title.

Name: _____ Date: _____ Show your reasoning.

01

Graph $f(x) = 7^{(x - (-4))} + 10$. Give its asymptote, domain, range, and two points.

**02**

For positive x and y , expand $\log_7(3x^6/y^4)$.

03

A population follows $P(t) = 1200 \cdot 7^t$. Find $P(0)$, $P(2)$, and the multiplication factor per time unit.

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04

Graph $y = \log_2(x - (8)) + 5$. Give domain, vertical asymptote, and two exact points.

05

A population follows $P(t) = 1000 \cdot 5^t$. Find $P(0)$, $P(2)$, and the multiplication factor per time unit.

06

For positive x and y , expand $\log_5(2x^3/y^9)$.

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01

Graph $f(x) = 7^{(x - (-4))} + 10$. Give its asymptote, domain, range, and two points.

Shift $y=7^x$ horizontally by -4 and up 10. Asymptote $y=10$; domain all real x ; range $(10, \infty)$. Points $(-4, 11)$ and $(-3, 17)$.

02

For positive x and y , expand $\log_7(3x^6/y^4)$.

Use product, quotient, and power rules: $\log_7(3) + 6\log_7(x) - 4\log_7(y)$.

03

A population follows $P(t) = 1200 \cdot 7^t$. Find $P(0)$, $P(2)$, and the multiplication factor per time unit.

$P(0) = 1200$; $P(2) = 58800$. Each increase of one in t multiplies the population by 7.

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04

Graph $y = \log_2(x - 8) + 5$. Give domain, vertical asymptote, and two exact points.

Argument must be positive: $x > 8$. Asymptote $x = 8$. Since $\log_2(1)=0$ and $\log_2(2)=1$, points are (9, 5) and (10, 6).

05

A population follows $P(t) = 1000 \cdot 5^t$. Find $P(0)$, $P(2)$, and the multiplication factor per time unit.

$P(0) = 1000$; $P(2) = 25000$. Each increase of one in t multiplies the population by 5.

06

For positive x and y , expand $\log_5(2x^3/y^9)$.

Use product, quotient, and power rules: $\log_5(2) + 3\log_5(x) - 9\log_5(y)$.