

Unit 8 - Chap 7 Day 2 - Graphing Exponentials

Alg2T DLTARGET Quiz

Unit 8 - Ch 7 Day 3 - Applications

1.) What makes a function exponential $y = a \cdot b^{x-h} + k$ GROWTH - $b > 1$ DECAY - $0 < b < 1$	2.) $y = -1 \cdot 2^{x-3} + 1$ $y = -1 \cdot 2^x$ DR: $y < 1$
3.) $y = 3 \cdot \left(\frac{1}{2}\right)^{x+2} - 2$ $y = 3 \cdot \left(\frac{1}{2}\right)^x$ DR: $y > -2$	4.) $y = 3 \cdot 2^{x+2} - 1$ $y = 3 \cdot 2^x$ DR: $y > -1$

1.) Simplify the following: a. $e^{-5} e^4 e^{-1}$ $\frac{1}{e^2}$ b. $(2e^{-2x})^3$ $\frac{8}{e^{6x}}$ c. $\frac{3e^5}{12e^3}$ $\frac{e^2}{4}$	2.) You buy a diamond ring that increases in value from \$4500 by 15% each year. What is the value after 6 years $y = 4500(1 + .15)^6$ $\\$10408.77$
3.) You deposit \$4000 in an account that pays 2.75% annual interest. Find the balance after 4 years if it is compounded... a. Daily $A = 4000(1 + \frac{.0275}{365})^{4 \cdot 365}$ $\\$4465.09$ b. Quarterly $A = 4000(1 + \frac{.0275}{4})^{4 \cdot 4}$ $\\$4463.43$	4.) You buy a boat that decreases in value 23% each year. If you paid \$22,000 for it, how much is it worth in 10 years? $y = 22000(1 - .23)^{10}$ $y = \\$1611.87$

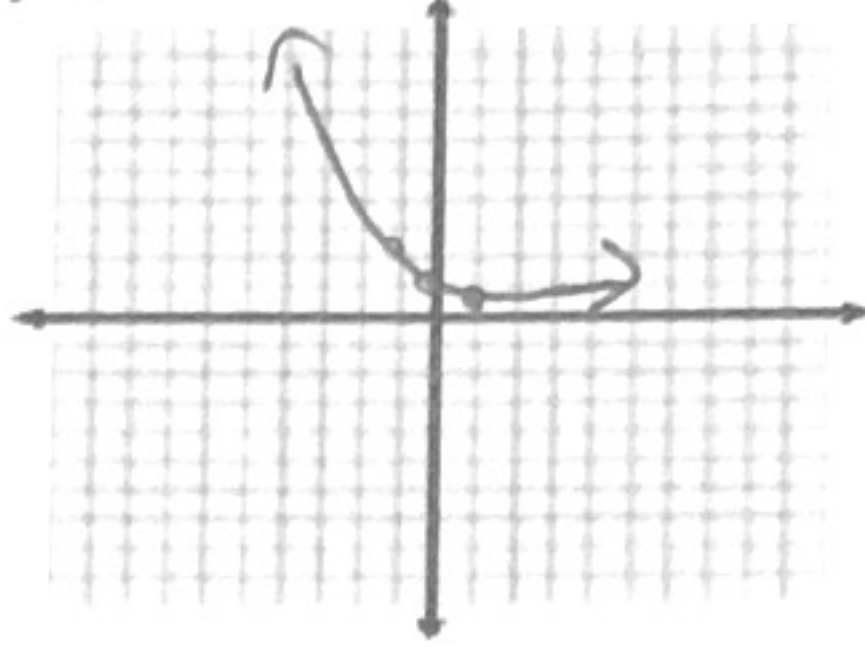
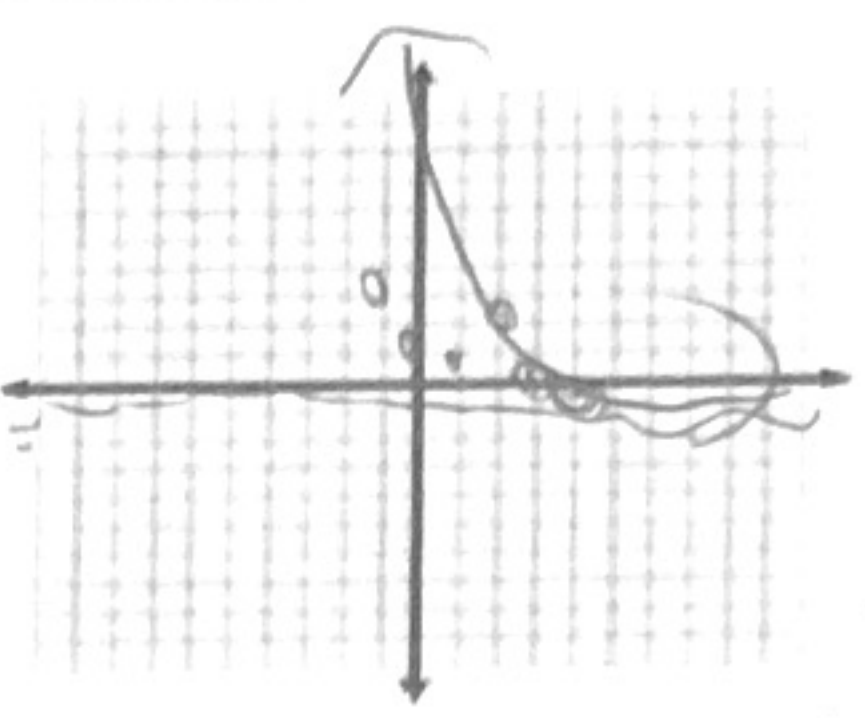
Alg2T DLTARGET Quiz

Unit 8 - Ch 7 Day 4 - Logarithms

1.) You deposit \$3500 in an account that pays 5% annual interest compounded continuously. How much will you have after 5 years? $A = Pe^{rt}$ $A = 3500e^{0.05 \cdot 5}$ $\\$4494.09$	2.) Rewrite the following in exponential form: a. $\log_4 16 = 2$ $4^2 = 16$ b. $\log_6 36 = 2$ $6^2 = 36$ c. $\log_6 1/36 = -2$ $6^{-2} = \frac{1}{36}$
3.) Evaluate the following: a. $\log_{1/2} 8 = x$ $(\frac{1}{2})^x = 8$ $x = -3$ b. $\log_2 64 = x$ $x = 6$ c. $\log_{16} 1/4 = x$ $16^x = \frac{1}{4}$ $x = -\frac{1}{2}$ d. $\log_3 1/27 = x$ $3^x = \frac{1}{27}$ $x = -3$	4.) Simplify the following: a. $\log_7 7 = 1$ b. $30^{\log_{30} 4} = 4$

Alg2T DLTARGET Quiz

Unit 8 - Ch 7 Day 5 - Graphing logs & Inverses

1.) Find the inverse: a. $y = \log_a 12$ $a = \log_y 12$ $y^a = 12$ b. $y = e^{x+2}$ $x = e^{y+2}$ $\ln x = y + 2$ $\ln x - 2 = y$	2.) Find the inverse: a. $y = \log_{12} x + 3$ $x = \log_{12} y + 3$ $x - 3 = \log_{12} y$ $\frac{1}{x-3} = y$ b. $y = 6 + \log x$ $x - 6 = \log y$ $10^{x-6} = y$
3.) Graph the following: List domain, range, asymptote $f(x) = \log_2 x$ $2^x = x$ 	4.) Graph the following: List domain, range, asymptote $f(x) = \log_4(x+1) - 3$ 

$$\begin{array}{r} x \\ 4 \overline{) 12} \\ \underline{8} \\ 4 \\ \underline{4} \\ 0 \end{array}$$

Alg2T DLTARGET Quiz

Unit 8 - Ch 7 Day 6 - Properties of Logs

1.) Expand the following: $\log 3x^2y^3$ $\log 3 + 2\log x + 3\log y$	2.) Condense the following: $\log_2 3 + 2\log_2 x + 3\log_2 y$ $\log_2 3x^2y^3$
3.) Use the change of base: a. $\log_3 6$ b. $\log_6 18$	4.) Condense: a. $3\log_3 2 + \log_3 6 =$ $\log_3 2^3 \cdot 6$ $\log_3 48$ b. $2\log_3 4 + \log_3 3 =$ $\log_3 4^2 \cdot 1$ $\log_3 16$

Alg2T DLTARGET Quiz

Unit 8 Ch 7 - Day 8 - Solving

1.) Solve. $2^{x+1} = 16^{x+2}$ $2^{x+1} = 2^4(x+2)$ $2^{x+1} = 2^{4x+8}$ $x+1 = 4x+8$ $-7 = 3x$ $x = -\frac{7}{3}$	2.) Solve. $\log_5 (x-3) = \log_5 (2x+5)$ $x+3 = 2x+5$ $-2 = x$
3.) Solve $\log_2 (2x+4) = 6$ $2^6 = 2x+4$ $64 = 2x+4$ $60 = 2x$ $30 = x$	4.) Solve. $\log_4 x + \log_4 (x+6) = 2$ $\log_4 (x^2+6x) = 2$ $4^2 = x^2+6x$ $0 = x^2+6x-16$ $(x+8)(x-2)$ NRP $x=2$