WARM-UP

Identify if it's exponential growth or decay and the y-int :

1.) $y = -3(5/2)^x$ growth (0,-3)

2.) $y = 1/4\ (3)^{(x-2)}$ growth (0, 1/4)

Solve each problem.

3.) A bracelet was purchased for $500. It decreases in value 1.9% each year. Find the value of the bracelet after 8 years. 437.17

4.) Chase deposited $950 into a savings account that earns 6.5% interest. How much will he have in the account after 15 years? 2,443.25

Unit 8 ~ Logarithms & Exponentials

Day 2: Intro to Logarithms & Exponentials

*Exponential Functions & Logarithmic Functions are INVERSES!

$\log_b x = y$ if and only if $b^y = x$

Example 1:

Write the equation in logarithmic form.

a) $100 = 10^2$

$\log_{10}(100) = 2$

b) $81 = 3^4$

$\log_3(81) = 4$

c) $2^5 = 32$

$\log_2 32 = 5$

Example 2:

Write the equation in exponential form.

a) $\log_2 128 = 7$

$2^7 = 128$

b) $\log_5 125 = 3$

$5^3 = 125$

c) $\log 1000 = 3$ $10^3 = 1000$ when ther is no base it is always ten.

Example 3:
Evaluate each logarithm by putting in exponential form.

a) $\log_2 32 = y$

$2^y = 32$ $\quad 2^y = 2^5$ $\quad y = 5$

b) $\log_5 125 = y$ $\quad 5^y = 125$ $\quad 5^y = 5^3$ $\quad y = 3$

c) $\log 100 = y$ $\quad 10^y = 100$ $\quad 10^y = 10^2$ $\quad y = 2$

Example 4:
Evaluate each logarithm by putting in exponential form.

a) $\log_8 32 = y$ $\quad 8^y = 32$ $\quad 2^{3y} = 2^5$ $\quad 3y = 5$ $\quad y = 5/3$

b) $\log_4 \frac{1}{64} = y$ $\quad 4^y = \frac{1}{64}$ $\quad 4^y = 4^{-3}$ $\quad y = -3$

c) $\log_2 2^5 = y$ $\quad 2^y = 2^5$ $\quad y = 5$