Index Card #7 (Back & Front)

Exponentials

$Y = A(B)^x$ Y = the new value A = initial Value B = Rate Growth B > 1
X = Time (usually) Decay 0 < B < 1

*****Remember when solving exponentials FIRST divide by the A Box in your exponential (Base Raised to a Power that has a variable in it) Always check to see if anything is being added or subtracted or multiplied by the Exponential – Move that first****

To Solve:

1. See if you can get common bases If yes start w smaller number and change to a number raised to a power. Then write the other side with the same base. Drop the bases Set exponents =
2. If Not Take the LOG of both sides. The exponent falls forward then divide by the LOG. And solve

Graphing:

1. Put equation into y = in calculator
2. Adjust your window if necessary
3. Write down your table
4. Scale the Graph $\frac{(lg\# - Sm\#)}{\#\ of\ lines}$

Logarithms

Log Rules

1. Power Rule: $\log a^x = x \log a$ (Timber)

2. Multiplication: $\log ab = \log a + \log b$ (Multiplying makes things larger, so does Addition)

3. Division: $\log \frac{a}{b} = \log a - \log b$ (Division makes things smaller, so does Subtraction)

To Solve:

1. You need ONE Log - Use your log rules to get one log
2. Move anything added/subtracted or Multiplied/Divided by the Log
3. Change to an Exponential

Logarithm		Exponential
$y = \log_b x$	← →	$x = b^y$

4. Solve (Like Above)

Graphing:

1. Put equation into y = in calculator Math A
2. Adjust your window if necessary
3. Write down your table
4. Scale the Graph $\frac{(lg\# - Sm\#)}{\#\ of\ lines}$

If just LOG — The base is 10 Exponentials and Logs are Inverses

LN – Natural Log LOG with a Base of e

- Take LN to solve exponential with e on Both Sides
- If you have an LN Rewrite as an exponential with e as your base

Then Solve Like normal Remember that e Has an exponent of 1