Algebra I - Introduction to Exponential functions 2/3/14

Note Title 1/20/2014

Warm Up

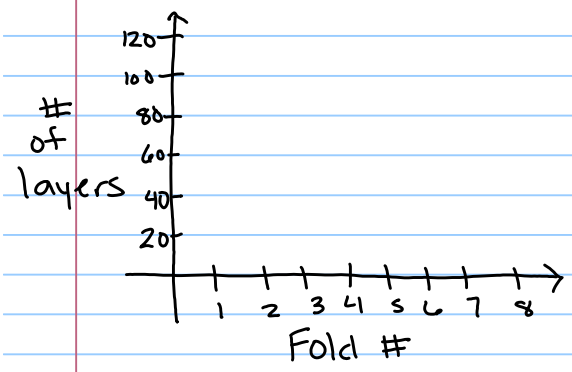
Write a rule:

1.

x	-2	-1	0	1	2
y	4	6	8	10	12

2. Grab a sheet of paper.
Copy the table
Wait for directions.

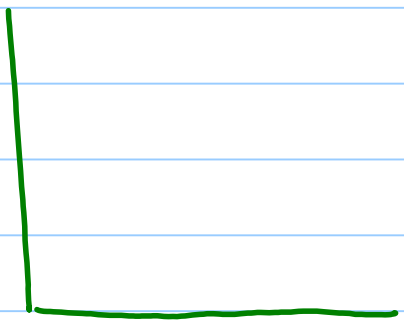
Fold	0	1	2	3	4	5	6	7	8	20
# of layers										



hmmm...

Can you think of any other life examples of exponential growth?

What do you think an exponential decay graph looks like?



Penny Activity

1. You are starting with 100 pennies. Put them all in the cup and record this "Initial Value" in your table.

2. Shake and toss the pennies in the plate. Move all the HEADS aside and count the remaining pennies (the tails). Record this number in the table as the 1st toss and return them to the cup.

3. Repeat the process until only one penny remains.

4. Look at your table with your partner. Do you see any sort of pattern emerging? What type of function do you think this is?

Toss #	Heads
0	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

5. What do you expect to see on your classmate's tables?

6. Plot your points on the screen.

7. Can we write a function to represent the general shape of the graph?

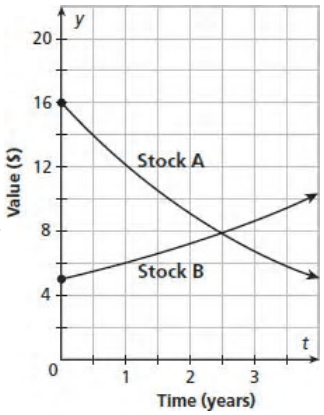
Note Title 1/16/2014

Exponential Penny

2/3 **Name** _____

Comparing Exponential Growth and Exponential Decay

The graph shows the value of two different shares of stock over the period of four years since they were purchased. The values have been changing exponentially. Describe and compare the behaviors of the two stocks.



A The model for the graph representing Stock A is an exponential _____ model.

The initial value is _____ and the decay factor is ____ ÷ ____ = ____.

B The model for the graph representing Stock B is an exponential _____ model. The initial value is _____ and the growth factor is ____ ÷ ____ = ____.

C The value of Stock A is going _____ over time. The value of Stock B is going _____ over time. The initial value of Stock A is _____ than the initial value of Stock B. However, after about _____ years, the value of Stock A becomes less than the value of Stock B.

REFLECT

3a. What is the growth rate for the increasing function above? Explain your reasoning.

_____

3b. What is the decay rate for the decreasing function above? Explain your reasoning.

_____

3c. How did the values of the stocks compare initially? after four years?

_____

3d. In how many years was the value of Stock A about equal to the value of Stock B? Explain your reasoning.

_____

3e. In how many years was the value of Stock A about twice the value of Stock B? Explain your reasoning.

_____

_____