

Bell Work: 1-24-19

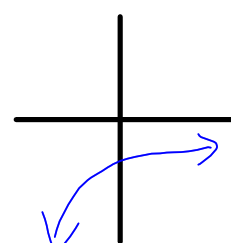
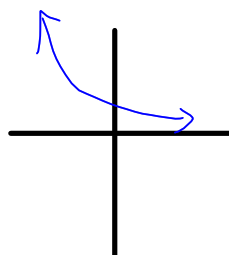
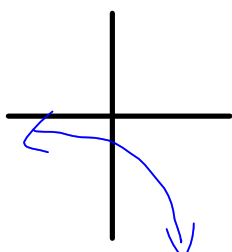
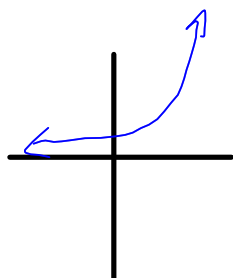
Answer this question in your spiral notebook.
Give your answer, then explain why you made your choice. (We will explore this later in class)

Question: Would you rather be given a penny on the first day of the month that doubles every day for one month, or would you rather have 1 million dollars right now.

Exponential Function - a function in the form of

$$y = a(b)^x.$$

$a \neq 0, b > 0, b \neq 1$
 x is a real number



Linear function



$$y = mx + b$$

$m = \text{slope } \frac{y_2 - y_1}{x_2 - x_1}$

$b = \text{y-intercept}$

Exponential function



$$y = a(b)^x$$

$a = \text{initial amount}$

$b = \text{common ratio}$

$x = \text{exponent}$

Does each table represent a linear or exponential function

$$y = mx + b$$

x	1	2	3	4
y	-1	1	3	5

— input —

— output —

+2 +2 +2

Linear

Add or subtract

$$y = a(b)^x$$

x	1	2	3	4
y	4	8	16	32

exponential

·2 ·2 ·2

multiply
or divide

The type of function is determined by how the y-value changes

Review of Bell Work Problem

Question: Would you rather be given a penny on the first day of the month that doubles every day for one month, or would you rather have 1 million dollars right now.

$a = \text{value of penny} = .01$

$b = \text{how value is changing} = 2$

$x = \text{\# of days} \approx 31$

$$y = a(b)^x$$
$$= .01(2)^{31}$$

$$y = .01(21,474,836.48)$$

$$y = 21,474,836.48$$