Name A key C
8A; Algebra 1

Date _____
Period _____

Do Now

Examine the following series and fill in the next 4 terms:

1, 3, 5, 7, 9, 11, 13, 15, 17...

+2 +2 +2 +2 +2 +2 +2 +2

To get from one term to the next, we must add two.

This is a *linear* function, where the term number is the "x" value and the value of the term is "y".

X	1	2	3	4	5	6	7	8	9
Y	1	3	5	7	9	11	13	15	17

+2 +2 +2 +2 +2 +2 +2 +2

(constant difference on the 1st row)

B/C we ADD the same # repeatedly

Or: what is the 3rd term? → 5 (what is y when x=3)

Notice that the change in x is 1 and the change in y is 2; the equation of the line is y = 2x – 1. The slope is 2, and the y-intercept is –1.

Now, examine the following series and fill in the next 4 terms:

1, 2, 4, 8, 16, 32, 64, 128, 256...

·2 ·2 ·2 ·2 ·2 ·2 ·2 ·2

To get from one term to the next, we must multiply by 2.

This function is called an *exponential* function because to get from one term to the next, we must multiply the same number repeatedly. In this case, that number is "2".

X	1	2	3	4	5	6	7	8	9
Y	1	2	4	8	16	32	64	128	256

→ #'s double

·2 ·2 ·2 ·2 ·2 ·2 ·2 ·2

The equation of this function is $y = 2^{x-1}$.