Graphing Exponential Decay functions

Learning Target: I can identify a graph as exponential Decay.

I can graph an exponential function by creating a table of values.

An exponential function is $y = ab^{x}$

• Exponential functions are <u>NON linear</u>

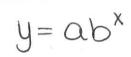
Exponential Functions can "decay" which means 5+0x+5 of F

large and gets smaller.

Exponential Stuff: Are all written in the form of

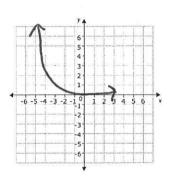
 $f(x) = starting \ amount \cdot multiplier^x$

y-intercept
What does exponential decay look like?



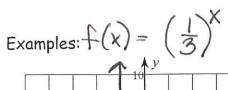
0 < 6 < 1

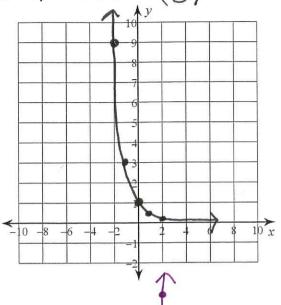
fraction or decimals



Graphing Review:

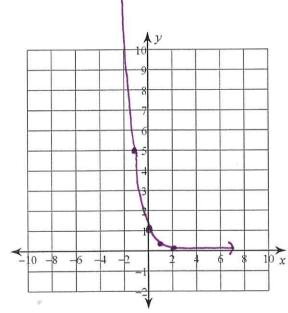
- 1.) Make a Table (2 negatives, zero, 2 positives)
- 2.) Plot the points
- 3.) Connect the points with a smooth curve





× ->	($\frac{\left(\frac{1}{3}\right)^{X}}{\left(\frac{3}{3}\right)^{-2} = \frac{1^{-2}}{3^{-2}} = \frac{3^{2}}{1^{2}} =$	9 9
-1		$\left(\frac{1}{3}\right)^{-1} = \frac{1^{-1}}{3^{-1}} = \frac{3}{1}$	3
6)	$\left(\frac{1}{3}\right)^{\circ}$	1
		$\left(\frac{1}{3}\right)'$	$\frac{1}{3}$ $\approx .3$
6	?	$\left(\frac{1}{3}\right)^2 = \frac{1^2}{3^2} = \frac{1}{9}$	$\frac{1}{9} \approx .1$

 $f(x) = \left(\frac{1}{5}\right)^{x}$



X\	$\left(\frac{1}{5}\right)^{\chi}$	y
-2	$\left(\frac{2}{1}\right)^{-\frac{2}{3}} = \frac{1}{1-\frac{3}{3}} = \frac{1}{2}$	25
-1	$\left(\frac{1}{5}\right)^{-1} = \frac{1}{5^{-1}} = \frac{5}{1}$	5
0	(5)	1
2	$\left(\frac{1}{5}\right)^3 = \frac{1}{5^3} = \frac{1}{25}$.04
1	$\left(\frac{1}{5}\right)^{1} = \frac{1}{5}$.2