

Name: \_\_\_\_\_ Hour: \_\_\_\_\_

Standard: A-SSE.3c. Use the properties of exponents to transform expressions for exponential functions.

/4

**Directions: Simplify the exponential expression.**

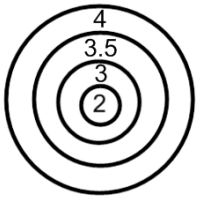
1.)  $(a + b)^2(a + b)^{-3}$

2.)  $\frac{(2a^7)(3a^2)}{6a^3}$

**Directions: Complete the equation by filling the box with the correct number.**

3.)  $(3x^3y^{\square})^3 = 27x^9$

4.)  $(m^2n^3)^{\square} = \frac{1}{m^6n^9}$



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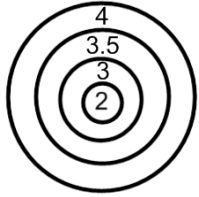
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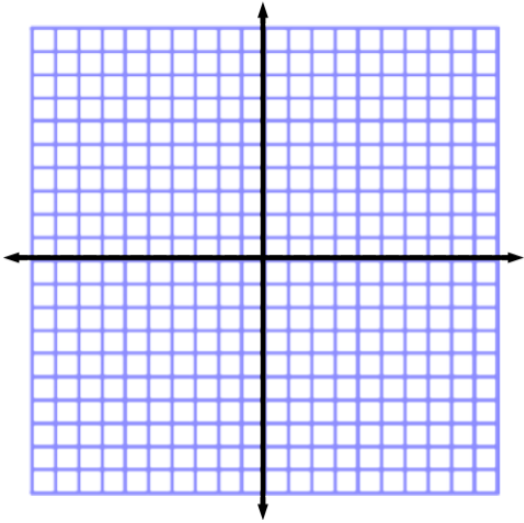
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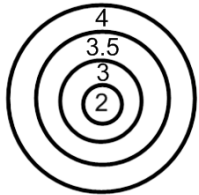
Name: \_\_\_\_\_ Hour: \_\_\_\_\_  
Standard: F-IF.7e. Graph exponential functions and show intercepts, maxima, and minima.

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Directions: Graph the function  $y = 2 \cdot \left(\frac{1}{2}\right)^x$  using the domain:  $\{-2, -1, 0, 1, 2\}$ .



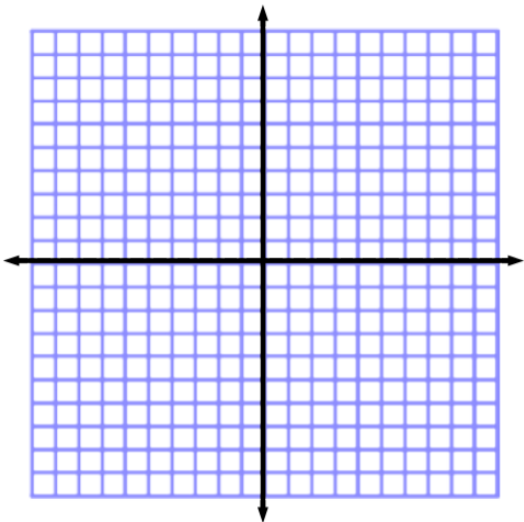
X	Y



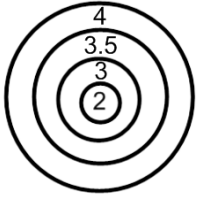
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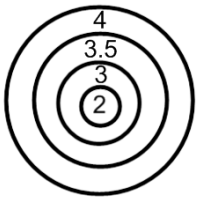
Standard: F-LE.1a. Prove that exponential functions grow by equal factors over equal intervals.

/4

**Directions: Determine if each situation is linear or exponential. Provide the equation and defend your answer.**

X	Y
0	1
1	4
2	16
3	64

X	Y
0	0
1	2
2	4
3	6



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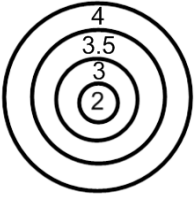
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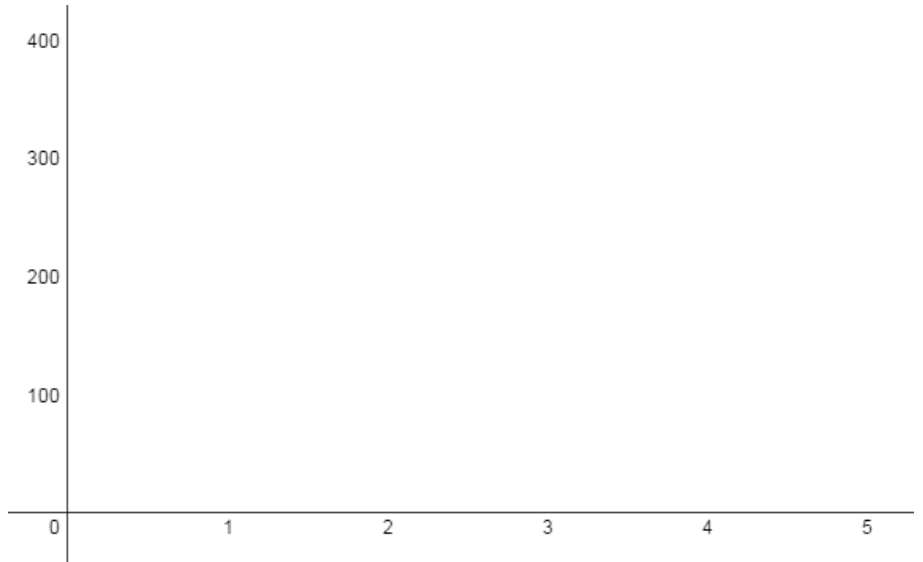
Standard: F-LE.5. Interpret the parameters in an exponential function in terms of a context.  
Standard: S-ID.6a. Fit a function to the data; use functions fitted to data to solve problems in the context of the data.

/4

**Directions: Complete the table and make a graph to represent the growth over time.  
Then, answer the follow up questions.**

A butterfly species doubles its population annually. If the population starts with 10 butterflies, create a table and graph that shows the growth over time.

X	Y
0	10
1	
2	
3	
4	
5	



- 1.) What is the growth factor for this relationship?
- 2.) What does it represent?
- 3.) What is the y-intercept for this relationship?
- 4.) What does it represent?
- 5.) Should your graph extend into the 2<sup>nd</sup> quadrant? Why or why not?