

NOTES: Section 8.3 – Graphs of Exponential Functions

Goals: #1 - I can graph an exponential function.



Homework: Section 8.3 Worksheet

Warm Up:

Simplify the expression.

1. $(-3x^4)^3(2x^3)^5$

2. $\left(\frac{1}{3}\right)^{-3}$

3. $\frac{2}{(-3y)^{-4}}$

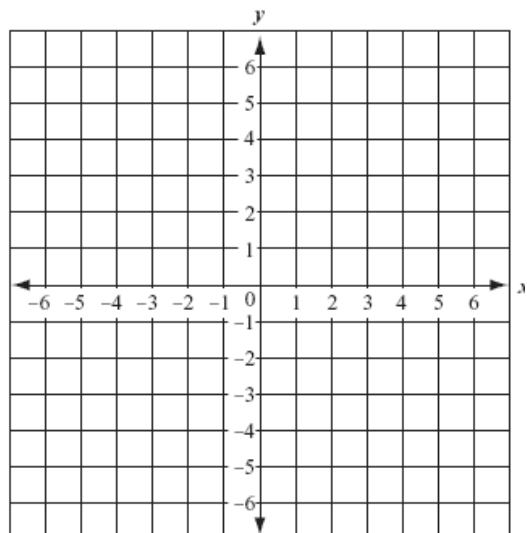
4. $4^9 \cdot \left(\frac{1}{4}\right)^4$

Exploration #1: Work with a partner and answer the following questions.

- Complete the table of vaules to graph the following function.

$$y = 2^x$$

x	y
-2	
-1	
0	
1	
2	

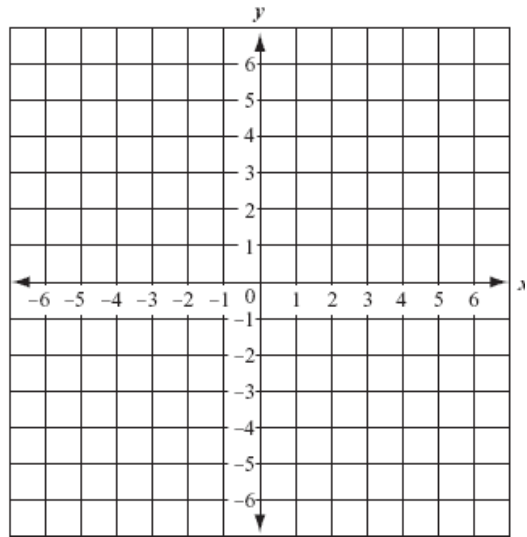


Name: _____ Hour: _____ Date: _____

2. Complete the table of vaules to graph the following function.

$$y = \left(\frac{1}{2}\right)^x$$

x	y
-2	
-1	
0	
1	
2	



Notes:

A function in the form _____ is an _____.

$$y = a \cdot b^x$$

When _____, the graph represents _____.

When _____, the graph represents _____.

Example #1: Tell whether the function represents *exponential growth* or *exponential decay*.

1. $y = 3^x$

2. $y = (0.8)^x$

3. $y = (1.5)^x$

Name: _____ Hour: _____ Date: _____

Example #2: Identify the decay or growth factor and the y -intercept of each exponential function.

1. $y = 4\left(\frac{4}{9}\right)^x$

2. $y = 2(6)^x$

3. $y = \left(\frac{5}{2}\right)^x$

Decay/Growth Factor:

Decay/Growth Factor:

Decay/Growth Factor:

y -intercept:

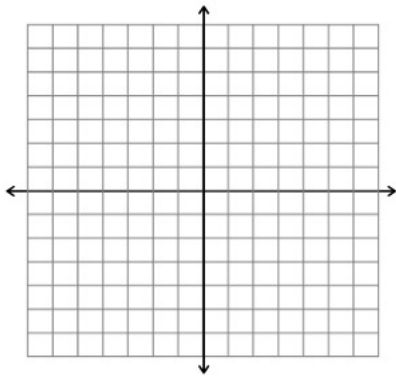
y -intercept:

y -intercept:

Example #3: Graph the exponential function.

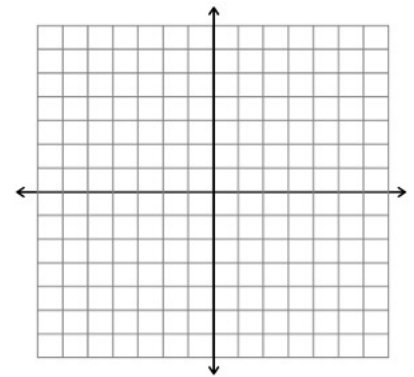
1. $y = 4^x$

x	y



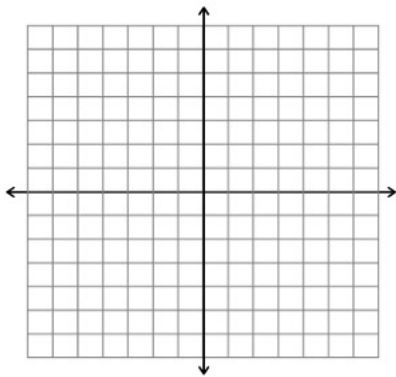
2. $y = \left(\frac{3}{4}\right)^x$

x	y



3. $y = 3(5)^x$

x	y



4. $y = 2\left(\frac{1}{7}\right)^x$

x	y

