Quiz - Exponentials

~~Agenda~~

Warm-Up

HW Check

Quiz

~~Reminders~~

Turn in HW 6.1 before you leave

Test next Thursday

Don't forget about mandatory tutoring!

Warm-Up (Friday)

1. Determine the type of function and then write the function rule.

x	-2	-1	0	1	2
y	12	6	3	$\frac{3}{2}$	$\frac{3}{4}$

÷2 ÷2 ÷2

×½ ×½

exponential

$y = a \cdot b^x$

$y = 3 \cdot (\frac{1}{2})^x$

a. What is the function rule?

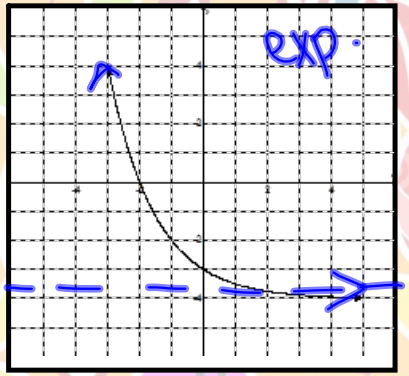
b. Is this an example of a growth or a decay? decay

c. What is the value of x when y is 6144? -11

d. What is the dependent variable when the independent variable is 9? y

.00586

2. Find the domain and range of the graph below.



Domain: $\mathbb{R}$

Range: $y > -4$

Homework Check

Answers:

1. A. ~ 250
   B. ~ 125
   C. Between 9 and 10 days
2. A. Number of cell phone users in 1995
   B. 1998
3. D
4. B
5. Exponential: $f(x) = -3^x$ $f(x) = \left(\frac{1}{2}\right)^x$ $f(x) = 2^x$

   Quadratic: $f(x) = \frac{1}{2}x^2$ $f(x) = 2x^2 + 5$ $f(x) = -3x^2$

   Linear: $f(x) = 4$ $f(x) = 8 - \frac{1}{2}x$ $f(x) = 2x - 5$

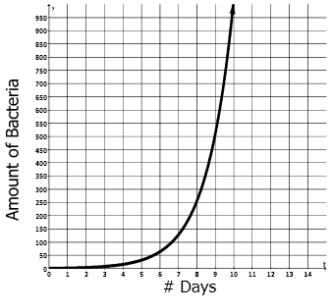
6. a. Exponential b. Quadratic c. Linear

Algebra I - Unit 10: Topic 1 – Interpreting Graphs of Exponential Functions

Practice - Interpreting Graphs of Exponential Functions **pp 772-795**

Name _____ Date _____ Period _____

1. The graph below shows how a certain bacteria can grow at an alarming rate when each bacteria splits into two new cells, thus doubling.

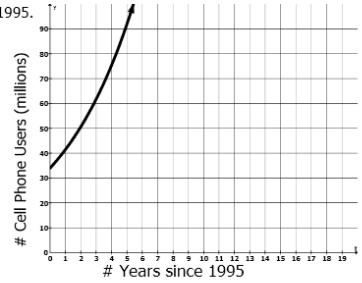


   A. What was the increase between Day 8 and Day 9?

   B. After 7 days, what is the approximate number of bacteria?

   C. After about how many days was there 800 bacteria?

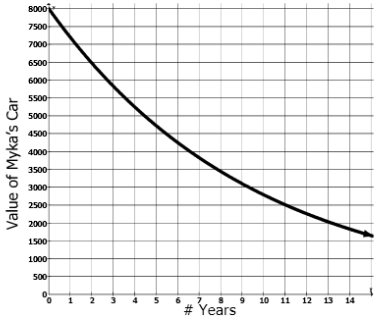
2. Cellular phone usage has grown about 22% each year since 1995.



   A. If the *y*-intercept is 34 (million), what does this mean?

   B. In what year were there approximately 60 million cellular phone users?

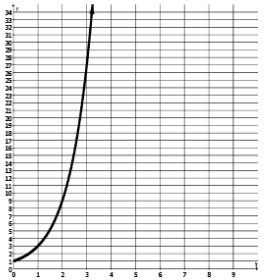
3. The graph below shows the relationship of the value of Myka's car over a period of years. According to the graph, which of the following statements appears to be true?



   A. The value of the car decreased by almost $1000 each year.
   B. The value of the car decreased by $500 each year.
   C. The value of the car decreased more from year 13 to year 15 than in any other year.
   D. The value of the car decreased more from year 0 to year 1 than in any other year.

Algebra I - Unit 10: Topic 1 – Interpreting Graphs of Exponential Functions

4. Which statement best describes the graph shown to the right?



A. The amount of money in John's savings when he deposits $35 each month.
B. The amount of money in an account that triples every month.
C. The amount of money in Kara's checking account when she writes $50 in checks each month.
D. The amount of money Michael owes on his car as he makes car payments.

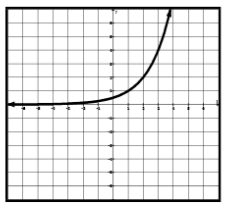
5. Rearrange the functions below into three related groups. Explain why you grouped the functions together. What made each function fit the characteristics of their group?

$f(x) = -3^x$ $f(x) = 4$ $f(x) = \left(\frac{1}{2}\right)^x$

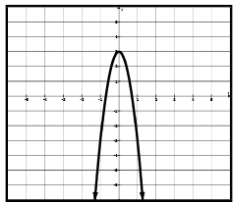
$f(x) = \frac{1}{2}x^2$ $f(x) = 2x^2 + 5$ $f(x) = -3x^2$

$f(x) = 8 - \frac{1}{2}x$ $f(x) = 2^x$ $f(x) = 2x - 5$

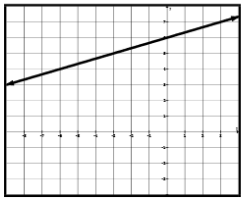
6. Identify the following graphs as linear, exponential, or quadratic.



a. _____



b. _____



c. _____

Quiz - Exponentials

Good luck! You have until the end of the period.

You may use your notebook and calculator.

Answer ~~every~~ question and show work to receive credit.

Turn in HW 6.1 before you leave!!