

Homework # 15

Trad.

Student: _____
 Date: _____
 Time: _____

Instructor: klecenda fort
 Course: Group 2
 Book: *Connected Mathematics 3
 (Grades 6-8)

Assignment: Unit 8-3 Investigation 2
 Additional Practice B

1. In a large city, the number of people with the flu, k , increases every day. On the first day, 10 people have the flu. Each day after the first, there are 10 times as many people who have the flu than there were the previous day. Write an equation that relates the number of people who have the flu, k , and the day, d .

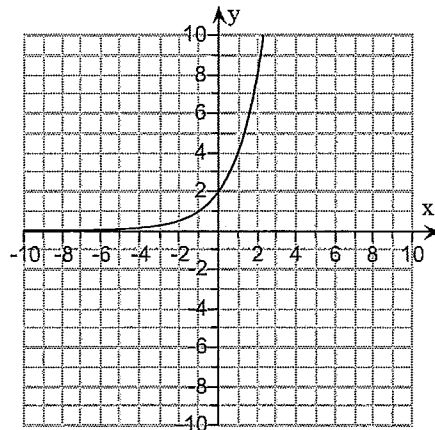
Which equation relates the number of people who have the flu, k , and the day, d ?

- $k = 10d$
 $k = 10 + 10^d$
 $k = 10^d$
 $k = 10 + d$

2. Use the graph of $y = Ca^x$ to determine C and a .

$C = \square$

$a = \square$



$[-10, 10]$ $[-10, 10]$
 $Xscl=1$ $Yscl=1$

3. Find the growth factor and the y -intercept of the following equation's graph.

$$y = 400(2^x)$$

The growth factor is \square .

The y -intercept is \square .
 (Type an ordered pair.)

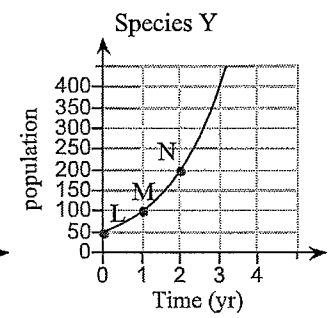
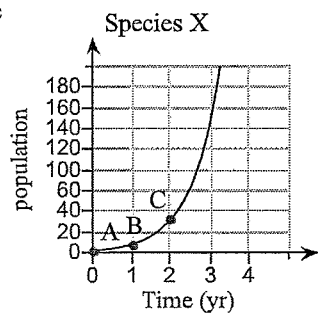
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4. The graphs to the right show the population growth for two species. Each graph represents exponential functions. The points on the graphs are listed below.

A (0,2)	L (0,50)
B (1,8)	M (1,100)
C (2,32)	N (2,200)



Complete parts a through c.

- a. Find the growth factor for the two species.

The growth factor for species X is .

The growth factor for species Y is .

- b. What is the y-intercept for the graph of species X? Explain what this y-intercept tells about the population. Select the correct choice below and fill in the answer box to complete your choice. (Type an ordered pair.)

- ^A The y-intercept is and it tells that the growth rate decreases.
- ^D The y-intercept is and it indicates that the initial population of species X is zero.
- ^U The y-intercept is and it indicates the initial population of species X.
- ^U The y-intercept is and it tells that the growth rate increases.

- c. What is the y-intercept for the graph of species Y? Explain what this y-intercept tells about the population. Select the correct choice below and fill in the answer box to complete your choice. (Type an ordered pair.)

- ^A The y-intercept is and it indicates the initial population of species Y is zero.
- ^D The y-intercept is and it tells that the growth rate increases.
- ^U The y-intercept is and it indicates the initial population of species Y.
- ^U The y-intercept is and it tells that the growth rate decreases.

5. A population of 75 foxes in a wildlife preserve triples in size every 11 years. The function $y = 75 \cdot 3^x$, where x is the number of 11-year periods, models the population growth. How many foxes will there be after 22 years?

After 22 years there will be foxes. (Type a whole number.)

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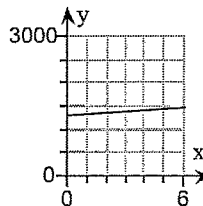
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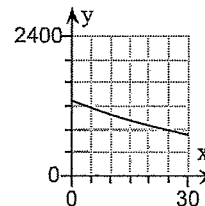
6. A solid waste disposal plan proposes to reduce the amount of garbage each person throws out by 2% each year. This year, each person threw out an average of 1300 lb of garbage. The function $y = 1300 \cdot 0.98^x$ models the average amount of garbage each person will throw out each year after x years. Graph the function.

Choose the correct graph on the right.

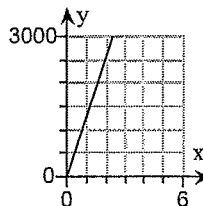
A



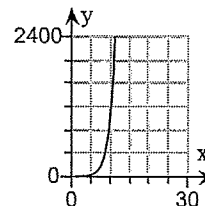
B



C



D



7. Find the growth factor and the y-intercept of the following equation's graph.

$$y = 4(2)^x$$

The growth factor is .

The y-intercept is .

(Type an ordered pair.)

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8. Determine whether the function given by the table is linear, exponential, or neither. If the function is linear, find a linear function that models the data; if it is exponential, find an exponential function that models the data.

x	f(x)
-1	4
0	8
1	16
2	24
3	40

Select the correct choice below and fill in any answer boxes within your choice.

- A The function is exponential. An exponential function that models the data is $f(x) = \square$.
(Simplify your answer.)
- B The function is linear. A linear function that models the data is $f(x) = \square$.
(Simplify your answer.)
- C The function is neither linear nor exponential.