Common Core Math II Name Date

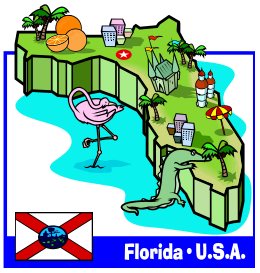
Independent Practice : Exponential Growth & Decay

1POPULATION

Missing Space

In 1990, Florida's population was about 13 million. Since1990, the state's population has grown about 1.7% each year. This means that Florida's population is growing exponentially.

Year	Population
1990	
1991	
1992	
1993	
1994	



a) Write an explicit function in the form $y = ab^x$ that models the values in the table.

b) What does x represent in your function?

c) What is the "a" value in the equation and what does it represent in this context?

d) What is the "b" value in the equation and what does it represent in this context?

2 HEALTHCARE

Since 1985, the daily cost of patient care in community hospitals in the United States has increased about 8.1% per year. In 1985, such hospital costs were an average of $460 per day.

a) Write an equation to model the cost of hospital care. Let x = the number of years after 1985.

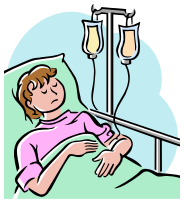
You should have the energy to spell out "equals"

b) Find the approximate cost per day in 2012.

c) When was the cost per day $1000

Missing Question Mark

d) When was the cost per day $2000?



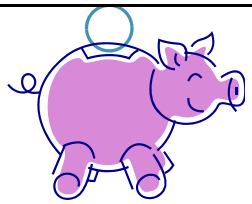
Missing Space

3HALF-LIFE

Comma

To treat some forms of cancer, doctors use Iodine-131 which has a half-life of 8 days. If a patient received 12 millicuries of Iodine-131, how much of the substance will remain in the patient 2 weeks later?

4 SAVINGS



Suppose your parents deposited $1500 in an account paying 6.5% interest compounded annually when you were born.

a) Find the account balance after 18 years.

b) What would be the difference in the balance after 18 years if the interest rate in the original problem was 8% instead of 6.5%?

c) What would be the difference in the balance if the interest was 6.5% and was compounded monthly instead of annually. Question mark

5 HEALTH

Since 1980, the number of gallons of whole milk each person in the US drinks in a year has decreased 4.1% each year. In1980, each person drank an average of 16.5 gallons of whole milk per year. Missing Space

Year	Population
1980	
1981	
1982	
1983	
1984	

a) Write a recursive function for the data in the table.

b) Write an explicit function in the form $y = ab^x$ that models the values in the table. Define your variables.

Extra space

c) According to this same trend, how many gallons of milk did a person drink in a year in 1970?

6 WASHINGTON, D.C.

The model $y = 604000(0.982)^x$ represents the population in Washington, D.C. x years after 1990.

a) How many people were there in 1990?

b) What percentage growth or decay does this model imply?

c) Write a recursive function to represent the same model as the provided explicit function.

Supposing

d) Suppose the current trend continues, predict the number of people in DC now.

Supposing

e) Suppose the current trend continues, when will the population of DC be approximately half what it was in 1990?

Original Format: MS Word

Adapted from Prentice Hall Algebra I pg 437-444

This just tells me you cannot type at all. Don't you have the will to read over it at least once?

Decent WCPSS worksheet when compared to other WCPSS worksheets. Idiot scale 7/10; Microsoft Word highlighted may of the mistakes.

Verdict: Typical Wake County Worksheet >1/3 sentences have a mistake. 9/10 Wow Factor