Name: _____**Period:**_____

GGG Investigations 1-3 Test (Algebra 8 2007)

Directions: Show all thinking! Use only pencil and remember to complete the heading at the top wtih your first, last name and period. Do your best! I know you will do well.

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1) Janelle deposits $2,000 in the bank. The bank will pay 5% interest per year, compounded annually. This means that Janelle's money will grow by 5% each year.

a. Make a table showing Janelle's balance at the end of each year for 4 years.

YEAR	**0**	**1**	**2**	**3**	**4**
BALANCE					

b. Write an equation for calculating the balance, b, at the end of any year t.

c. Approximately how many years will it take for the original deposit to double in value? Explain your reasoning.

d. Suppose the interest rate is 10%. Approximately how many years will it take for the original deposit to double in value? How does this interest rate compare with an interest rate of 5%?

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2) The tables below represent three savings plans.

- Cela receives $20 for her birthday on January 1, puts it in her drawer, and adds $4 to it every month.
- Beginning in January, Larry hides $20 under his mattress every month.
- Noah deposits $20 in a savings account at the beginning of January and makes no more deposits. The bank adds interest to his account at a rate of 1.2% per month.

Plan 1

Month (m)	Amount (A)
0 Jan	$20
1 Feb	$40
2 Mar	$60
3 April	$80

Plan 2

Month (m)	Amount (A)
0 Jan	$20
1 Feb	$20.24
2 Mar	$20.48
3 April	$20.73

Plan 3

Month (m)	Amount (A)
0 Jan	$20
1 Feb	$24
2 Mar	$28
3 April	$32

a. Whose plan is plan 1?

b. How long does it take for the original amount of money to double in plan 1?

c. Write an equation to model the growth in plan 1.

d. Whose plan is plan 2?

e. How long does it take for the original amount of money to double in plan 2?

f. Write an equation to model the growth in plan 2.

g. Whose plan is plan 3?

h. How long does it take for the original amount of money to double in plan 3?

i. Write an equation to model the growth in plan 3.

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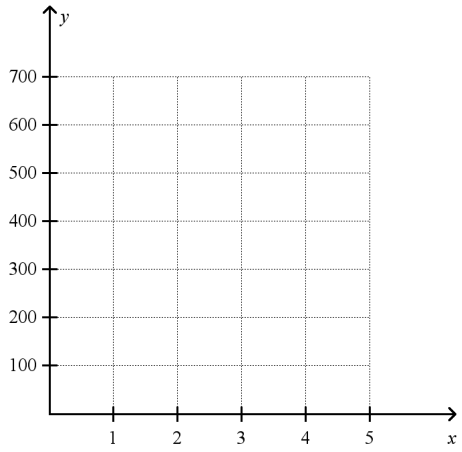
3) Tribetts are fuzzy insects that reproduce at the rate of 50% every day. Suppose you begin with 100 tribetts.

a. Make a table showing the growth in the number of tribetts for the first 5 days, round to the nearest Tribett.

Day	**0**	**1**	**2**	**3**	**4**	**5**
Tribetts						

b. Make a graph for this relationship.



c. On what day will there first be 5,000 tribetts?

d. Write an equation for the relationship between days d and numbers of tribetts T.

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4) The table below shows an exponential pattern.

X	0	1	2	3	4	5
Y	1	1.2	1.44	1.728		

a. Continue the table by giving the values for the next column.

b. Write an equation that represents the pattern in the table.

c. What is the growth factor? Growth rate? Explain how you determined these.

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5) Write the numbers in scientific notation.

a.) $235,600 =$ b.) $968,456,030 =$

Write the numbers in standard form.

a.) $3.45 \times 10^{7} =$ b.) $7.02 \times 10^{11} =$

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6) Change the growth factor to a rate or the growth rate to a growth factor.

growth rate	growth factor
25%	
4%	
	1.08
	3