



Name \_\_\_\_\_

Date \_\_\_\_\_ Pd. \_\_\_\_\_

### Exit Card: Growth and Decay

In the Mathematical Idol competition, the number of contestants decreased by 75% in each round. In the first round there were 4096 contestants. There was only one contestant left at the end of the competition. How many rounds were in the competition?

- F. 5                      G. 7                      H. 9                      J. 14

The original value of a car is \$20,000. The car loses value exponentially at the rate of 15% per year.

What will the value of the car be in 5 years? Round your answer to the nearest dollar.

	/	/	/	
•	•	•	•	•
0	0	0	0	0
1	1	1	1	1
2	2	2	2	2
3	3	3	3	3
4	4	4	4	4
5	5	5	5	5
6	6	6	6	6
7	7	7	7	7
8	8	8	8	8
9	9	9	9	9

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**Homework: Pages 564 – 565 (11 – 14, 17)**

The use of free weights for fitness has increased in popularity. In 1997, there were 43.2 million people who used free weights.

11. Assuming the use of free weights increases 6% annually, write an equation for the number of people using free weights  $t$  years from 1997.

12. Predict the number of people using free weights in 2007.

13. The population of Mexico has been increasing at an annual rate of 1.7%. If the population of Mexico was 100,350,000 in the year 2000, predict its population in 2012.

14. Determine the amount of an investment if \$500 is invested at an interest rate of 5.75% compounded monthly for 25 years.

17. In 1994, the sales of music cassettes reached its peak at \$2,976,400,000. Since then, cassette sales have been declining. If the annual percent of decrease in sales is 18.6%, predict the sales of cassettes in the year 2009.