

Name: \_\_\_\_\_

### Exponential Growth and Decay

1) A population of 422,000 increases by 12% each year.

a) Write an exponential growth function to model the situation.

b) What will be the population in 5 years?

c) What year will the population double?

2) You start with \$30,000 and earn 15% interest each year.

a) Write an exponential growth function to model the situation.

b) How much money will you have in 8 years?

c) How many years will it take for the account to reach \$1,000,000?

3) A car is bought for \$13,000 in the year 2012. And, it depreciates at 12% each year.

a) Write an equation to model the situation.

b) How much will the car be worth in 4 years?

c) In what year will the car cost about \$2500?

4) The population of Baconburg is 20,000 in the year 1990, and grows by 13% each year.

a) Write an equation to model the situation.

b) How much will the population be after 9 years?

c) What year will the population triple?

5) A Limited Edition G43 Guitar cost \$9,675. It decreases in value by 9.5% every year.

a) Write an equation to model the situation.

b) How much will the guitar cost in 3 years?

c) In what year, will the guitar be worth \$15,000?