Math 109, Practice Quiz 3: Linear and Exponential Growth

Name: _____

Instructions. You have 15 minutes to complete the following problems, without notes. You may use a scientific calculator (but not a cell phone calculator).

1. Rent for an apartment is $545 per month.

    (a) How much does it cost to rent the apartment for nine months?

    (b) Does the cost of renting increase linearly or exponentially, as a function of the amount of months rented?

2. The U.S. population is currently about 340 million and is growing at about .5% per year.

    (a) Based on these numbers, what will the population of the U.S. be next year?

    (b) If the current growth rate continues for the long term, what will the population of the U.S. be in ten years?

    (c) Is this population growth linear or exponential?

3. A summer camp director wants to have about one staff member for every six campers.

    (a) If 300 campers have signed up, how many staff members will the director be looking for?

    (b) Does the number of staff members increase linearly or exponentially with the number of campers?