Modeling Exponential Growth and Decay USE A CALCULATOR ON THIS HOMEWORK

Write an exponential growth or decay function to model each situation. Fill in the table, then graph each function.

- 1. The population is 20,000 now and expected to grow at an annual rate of 5%.
- 2. A boat that cost \$45,000 is depreciating at a rate of 20% per year.



3. The population of a city in 2005 was 36,000. By 2010, the city's population had grown to 57,600 people.

a. Assuming that the population of the city has grown **linearly** since 2005 and continues to grow at the same rate, what will the population be in 2015?

b. Assuming that the population of the city has grown **exponentially** since 2005 and continues to grow at the same rate, what will the population be in 2015?