1. A college with a graduating class of 4000 students in the year 2002 predicts that it will have a graduating class of 4862 in 4 years. Write an exponential function to model the number of students y in the graduating class t years after 2002.

2. In your science lab you measure the temperature of a liquid to be $114°$ 1 minute after being taken off the burner. After 10 minutes you find that the temperature has dropped to $71.848°$. Write an exponential function to model this rate of cooling.

3. You open a new college savings account. After 7 years you have $731.22 in the account and then 15 years after opening the account you have $2,056.66. Assume interest is compounded annually. How much money did you open the account with? What is the growth rate?

5. You have just created your own website. You are keeping track of the number of hits (the number of visits to the site). The table shows the number y of hits in each of the first 10 months where x is the month number.

x	1	2	3	4	5	6	7	8	9	10
y	22	39	70	126	227	408	735	1322	2380	4285

a. Find an exponential model for the data.
b. According to your model, how many hits do you expect in the twelfth month?
c. According to your model, how many hits would there be in the thirty-fourth month? What is wrong with this number?

6. The population of a small town has been declining because jobs have been leaving the area. The population was $23,000$ in 2002 and $18,750$ in 2007. Assume that the population is decreasing exponentially.

a. Define variables and write an equation that models the population in this town since 1992.
b. Use your model to predict the population in 2010.
c. According to your model, in what year will the population first fall below $12,000$?