Exponential Mongeese

Time	Population
1	3,085
2	7,712
3	19,281
5	120,508

The above table shows the mongoose population of Hawaii. Time is given in years since 1970.

1. What type of function is this? How can you tell?
2. How many mongeese where there in 1970?
3. Determine an equation describing this data.
4. Explain the meaning of every symbol in the equation.
5. By what percent does the mongoose population grow each year?
6. Use your equation to predict the number of mongeese in 1985.

Imagine you are writing a Field Guide of Mathematical Functions. What are the "field markings" – i.e., useful identifying characteristics – for exponential functions? (Don't forget to ponder exponential decay.)

1. What does the graph of an exponential function look like?
2. How can you tell if a function is exponential by looking at a table of values?
3. What is the equation for an exponential function?
4. If given a verbal description of a function, how can you tell if it's exponential?