1. Direct proportion equation :

2. Inverse (indirect) proportion equation:

3. k is called the _____

Exponential Growth/Decay class examples

1) If the rate of change of y varies directly with the value of y, find the general equation:

2) The rate of increase of the population of a certain city is proportional to the population. If the population in 1930 was 50,000 and in 1960 it was 75,000, what was the expected population in 1990?

3) The rate of decay of radium is proportional to the amount present at any time. If 60 mg of radium are present now and its half-life is 1690 years, how much radium will be present 100 years from now?

4. In a certain culture where the rate of growth of bacteria is proportional to the amount present, the number triples in 3 hours.
A) If at the end of 12 hours there were 10 million bacteria, how many were present initially?
B) Find the specific exponential growth equation

Note for homework: Newton's law of cooling: the rate of change in the temperature of an object is proportional to the difference between the object's temperature and the temperature of the surrounding medium