

1. A herd of rabbits presently consists of 10 elephants. This herd triples every 5 years. After how many years will this herd have 300 rabbits?
2. A grocery basket for a family of 4 people cost 200\$ in the year 2001. If the inflation rate was maintained at 2.5% during the years that followed,
  - a. What is the cost of this basket today?
  - b. In what year will the basket be worth 300\$?
3. In the year 2005, a village's population was 1000. In the year 2007, this same village had a population of 800. If the rate of decay remains constant, in what year will this village's population be 500?
4. The value of a house bought for 100 000\$ increases at an approximate rate of 7% per year since its purchase. How many years after its purchase will this house be worth more than 200 000\$?
5. In the year 2000, a Toyota car's value was 25 000\$ and appreciates by 5% yearly. In the year 2000, a Lexus car's value was 35 000\$ and decays by 7% yearly. After how many years will both cars be worth the same amount?
6. During a laboratory experiment, there are initially 12 insects. We notice that the number of insects doubles every 3 days. After how many days will the number of insects reach 6144?
7. The number of bacteria in a culture triples every 3- minutes. Four hours after the beginning of the experiment, there are 32 805 bacteria. How many bacteria are there in this culture 1 hour and 15 minutes after the beginning of the experiment?