



## APPLICATIONS OF GEOMETRIC SEQUENCES AND SERIES

### Applications of Geometric Sequence

1. An investor deposits \$ 15 000 in a bank account. The bank offers an interest rate of 13% per annum.
  - a) What is the value of the investment 4 years later?
  - b) How much time is needed for the amount to double?
2. A person wishes to buy a motorcycle worth \$ 12 000. In order to collect this amount, he deposits an amount  $P$  at the bank, and lets it flourish for 5 years at an interest rate of 5%, capitalized biannually. Find  $P$ .
3. Stocks of a company are initially issued at the price of 10 \$. The value of the stock grows by 25 % every year. Show that the value of a stock follows a geometric sequence.

### Applications of Geometric Series

1. A ball is dropped from a height of 25 meters. With each bounce, it rebounds to 75% of its previous height. How many meters will the ball bounce in total as it continues to bounce infinitely?
2. The ball is dropped from a height of 10 meters. The total number of meters the ball will bounce as it approaches infinity is 14.2188. Find the rate at which it bounces each time.

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Tutoring: Exercises



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