**Geometric Sequence** – a sequence is geometric if there is a number *r*such that

* *r* is known as the common ratio

Find the common ratio for each geometric sequence

Ex.

Ex.

Ex. , …

**The nth Term of a Geometric Sequence**

where

Geometric Sequence:

**Recursive Formula for a Geometric Sequence**

Ex. Find the first 5 terms of the geometric sequence whose first term is and the common ratio = 4

Ex. Find the 9th term of the geometric sequence whose first term is 4 and whose common ratio is

Ex. Find the 10th term of the geometric sequence

Ex. The 2nd term of a geometric sequence is and the 5th term is . Find the 6th term.

**The Sum of a Finite Geometric Sequence**

= where

Ex. Find the sum:

Ex. Find the sum of the first 5 terms of the geometric series

Ex. Write the geometric series using sigma (Σ) notation.

**The Sum of an Infinite Geometric Series**

as long as

Ex. Find the sum:

Ex. Find the sum

**Application**

A deposit of $100 is made on the first day of a month in a savings account paying 6% interest compounded monthly. Find the balance of this annuity after 4 years.

Compound Interest Formula: