

## MODULE – 3 of 3 (HANDOUT)

### Chapter – 9 (Sequences & Series)

#### Geometric Progression (G . P.)

Sequence of numbers such that the quotient of any two successive members of the sequence is a constant

The General term of a G.P is

$$a_n = ar^{n-1}$$

The sum of first  $n$  terms of a G.P is

$$S_n = na \quad \text{when } r = 1$$

$$S_n = \frac{a(1-r^n)}{1-r} \quad \text{when } r \neq 1$$

## Geometric Mean (G .M.)

### ➤ One Arithmetic Mean

$$G = \sqrt{ab}$$

### ➤ $n$ Geometric Means

$n$  geometric means between  $a$  and  $b$  are  $a.r, a.r^2, a.r^3, a.r^4, \dots, a.r^n$ .

Where  $r = \left(\frac{b}{a}\right)^{1/n+1}$

## Relationship Between A.M. and G.M.

$$A \geq G$$

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