

NALANDA COLLEGE - COLOMBO 10

Grade 11

Mathematics

Second Term – Unit Test



16) Geometric Progressions

Part I

1. Find the first term of the geometric progressions with common ratio 2 and 6th term 128.
2. The common ratio of a geometric progression is 2 and the first term is -2. Which term is equal to -256?
3. The first term of a geometric progression is 3. The 5th term is 243. Find the common ratio of the progression.
4. Find the 6th term of the geometric progression 40, 20, 10....
5. Indicate as a power of 2, the 20th term of the geometric progression with first term 8 and common ratio 2.
6. Find the common ratio of the geometric progression given below.
 $\frac{1}{2}, 1, 2, 4, \dots$
7. Find the 9th term of the geometric progression with first term $\frac{1}{8}$ and common ratio 2.
8. Find the sum of the first 6 terms of the geometric progression 3, 6, 12, 24....
9. The third and fourth terms of a geometric progression are 63 and 189 respectively. Find its,
 - i. Common ratio
 - ii. First term
10. Find the common ratio of the geometric progression with first term 3 and fourth term 192.

Part II

1. A weed which grows on water covers an area of 6m². The area in which the weed covers doubles every week. Using your knowledge of geometric progressions, find the number of weeks required for this weed to grow and cover an area of 192m².
2. The 5th term of a geometric progression is 2 and the 11th term is 128.
 - i. Show that there are two such geometric progressions.
 - ii. Write down the first four terms of each progression.
3. a) The nth term of a progression is $2(3)^{n+1}$.
 - i. Show that this is a geometric progression.
 - ii. Find the first term and the common ratio of the progression.

b) T₁, T₂, T₃ of a geometric progression are x, x³ and x⁵. Find $\frac{T_9}{T_5}$ of that progression.