



## Series - Tutoring Sheet #5

1. An arithmetic progression has fifth term equal to 4 ,and the sum of its first 13 terms is 65.Find the first term and the common difference.
2. Find an arithmetic series(first term and common difference) where the fourth term is 5 and the sum of the third and the eighth terms is 1.Then find the 15<sup>th</sup> term.
3. Find three consecutive terms of a geometric sequence such that their product is 64 and their sum is 21.  
[Hint: assume the terms :  $a/r$  ,  $a$  ,  $ar$  )
4. In the geometric sequence : 81,27,9, .... Which term is  $1/243$
5. Find a geometric sequence where the third term exceeds the second by 6 and the fourth term exceeds the third by 4.
6. A geometric progression has second term equal to 2 and a sum to infinity of 9.Show that there are two possible values of the common ratio and find these.
7. An arithmetic progression has first term equal 3 and the sixth term is double the third .Find the sum of the first 9 terms.
8. The sum of first n terms of an arithmetic progression is :  
 $S_n = n^2 - 3n$  .Find the fourth term and the n<sup>th</sup> term.
9. How many terms are needed of the arithmetic progression 1,3,5,..... to get a sum of 1521.
10. Find the sum of the first 21 terms of the arithmetic progression:  
 $\ln 10$  ,  $\ln 20$  ,  $\ln 40$  , .....