SUCCESS INSTITUTE **Assignment - 56** ***10th Class Expert***

Q1. How many terms of the AP : 24 , 21 , 18 , . . . must be taken to give a sum of 78 ? Ans. 4 or 13 terms

Q2. How many terms of the AP : 9 , 17 , 25 , . . . must be taken to give a sum of 636 ? Ans. 12 terms

Q3. How many terms of the AP : 63 , 60 , 57 , . . . must be taken to give a sum of 693 ? Ans. 21 or 22

Q4. What is the sum of first 20 odd natural numbers ? Ans. 400

Q5. What is the sum of first 20 even natural numbers ? Ans. 420

Q6. Find the sum of first 40 positive integers divisible by 3. Ans. 2460

Q7. Find the sum of first 40 positive integers divisible by 6. Ans. 4920

Q8. Find the sum of first 15 multiples of 8. Ans. 960

Q9. Find the sum of all 3-digit natural numbers which are multiples of 11. Ans. 44550

Q10. Find the sum of all 3-digit natural numbers which are divisible by 13. Ans. 37674

Q11. Find the sum of odd natural numbers between 0 and 50. Ans. 625

Q12. Find the sum of odd natural numbers between 0 and 100. Ans. 2500

Q13. Find the sum of first 15 terms in each case , where a_n is defined as below :
(i) $a_n = 3 + 4n$ (ii) $a_n = 9 - 5n$ Ans. (i) $S_{15} = 525$ (ii) $S_{15} = -465$

Q14. Find the sum of first 24 terms of an AP whose $n^{\text{th}}\ term$ is given by $3 + 2n$. Ans. 672

Q15. If the sum of first 7 terms of an AP is 49 and that of 17 terms is 289, find the sum of first n terms. Ans. n^2

Q16. The sum of the third and the seventh terms of an AP is 6 and their product is 8. Find the sum of first sixteen terms of the AP. Ans. a = 1 , d = $\frac{1}{2}$, $S_{16} = 76$ a = 5 , d = $-\frac{1}{2}$, $S_{16} = 20$

Q17. If the sum of the first n terms of an AP is $4n - n^2$, what is the first term ? What is the second term ? Similarly , find the 3^{rd} , the 10^{th} and the $n^{\text{th}}\ term$. $Ans.\ a_1 = 3$, $a_2 = 1$, $a_3 = -1$, $a_{10} = -15$, $a_n = 5 - 2n$

Q18. The sum of the first n terms of an AP is $3n^2 + 6n$. Find the $n^{\text{th}}\ term$ of this AP. Ans. $6n + 3$

Q19. In an AP , the sum of first 7 terms is 63 and the sum of its next 7 terms is 161. Find the AP. Ans. 57

Q20. In an AP , the sum of first 10 terms is -150 and the sum of its next 10 terms is -550. Find the AP.
Ans. 3 , -1 , -5 , . . .

Q21. In an AP of 50 terms, the sum of first 10 terms is 210 and the sum of last term 15 terms is 2565. Find the AP.
Ans. 3 , 7 , 11 , . . .

Q22. The sum of first six terms of an AP is 42. The ratio of its 10^{th} term to its 30^{th} term is 1 : 3 , find the AP.
Ans. 2 , 4 , 6 , . . .

Q23. The sum of first seven terms of an AP is 182. The ratio of its 4^{th} term to its 7^{th} term is 1 : 5 , find the AP.
Ans. 2 , 10 , 18 , . . .