**CLASS-X**
**MATHEMATICS WORKSHEET**
**CHAPTER-5: ARITHMETIC PROGRESSION**

VERY SHORT ANSWER TYPE QUESTIONS

Q1. The nth term of an AP is 7 – 4n. Find its common difference.
Q2. Which term of the AP 21, 18, 15, …, is zero?
Q3. For what value of p, are 2p + 1, 13, 5p – 3 three consecutive terms of an AP?
Q4. If $a_n = n(n – 3)/ n + 4$, then find $18^{th}$ term of this sequence.
Q5. If the sum of first m terms of an AP is $2m^2 + 3m$, then what is its second term?
Q6. How many 2 digit numbers are divisible by 3? (CBSE 2019)

SHORT ANSWER TYPE QUESTIONS

Q7. Find the sum of first 8 multiples of 3. (CBSE 2018)
Q8. If the sum of first n terms of an AP is $n^2$, then find its $10^{th}$ term. (CBSE 2019)
Q9. If the sum of first p terms of an AP is $ap^2 + bp$, find its common difference.
Q10. The sum of three numbers of an AP is 27 and their product is 405. Find the numbers.
Q11. If the ratio of sum of the first m and n terms of an AP is $m^2 : n^2$, show that the ratio of its mth and nth terms is (2m – 1) : (2n – 1).
Q12. If m times mth term of an AP is equal to n times nth term, find the (m + n)th term of the AP.
Q13. The sum of the first 7 terms of an AP is 63 and the sum of its next 7 terms is 161. Find the $28^{th}$ term of this AP.
Q14. Which term of the progression 19, 18⅕, 17⅖,….is the first negative term.
Q15. If the pth, qth, rth terms of an AP be x, y, z respectively, show that $x(q – r) + y(r – p) + z(p – q)$.
Q16. If the pth term of an AP is 1/q and the qth term is 1/p, show that the sum of pq terms is ½(pq + 1).

LONG ANSWER TYPE QUESTIONS

Q17. In an AP of 50 terms, the sum of first 10 terms is 210 and sum of its last 15 terms is 2565. Find the AP.
Q18. The sum of four consecutive numbers in an AP is 32 and the ratio of the product of the first and the last term to the product of two middle terms is 7:15. Find the numbers. (CBSE 2018)
Q19. The first and the last terms of an AP are 8 and 350 respectively. If it's common difference is 9, how many terms are there and what is their sum?
Q20. If $a^2$, $b^2$, $c^2$ are in AP, prove that a/(b + c), b/(c + a), c/(a + b) are in AP.
Q21. If $S_1$, $S_2$, $S_3$ are the sum of n terms of three Aps, the first term of each being unity and the respective common difference being 1, 2, 3. Prove that $S_1 + S_3 = 2S_2$.



ANSWERS

1. -4
2. 8
3. 4
4. 135/11
5. 9
6. 30
7. 108
8. 19
9. 2a
10. 3, 9, 15 or 15, 9, 3
12. 0
13. 57
14. 25
17. 3, 7, 11,……,199
18. 2, 6, 10, 14 or 14, 10, 6, 2
19. 39, 6981