

Assignment Class X Arithmetic Progression

- Q1. Find A.P. whose first term is a and the common difference d are given below:
(a) $a = 8, d = 4$ (b) $a = -90, d = 20$ (c) $a = 2, d = -1/2$ (d) $a = p, d = -3q$
- Q2. The n^{th} term of a sequence is $2n + 1$. Is the sequence, so formed is A. P.? If so, find its 12^{th} term.
- Q3. Find the value of k for which the following terms are in A.P.
(a) $2k + 1, k^2 + k + 1, 3k^2 - 3k + 3$ (b) $k + 2, 4k - 6, 3k - 2$ (c) $8k + 4, 6k - 2, 2k + 7$
- Q4. Which term of A.P. 3, 8, 13, 18,..... is 248?
- Q5. How many terms are in the A.P. 6, 3, 0, -3,....., -36?
- Q6. For what value of n , the n^{th} term of the following A.P.s are equal?
23, 25, 27, 29,..... and -17, -10, -3, 4,.....
- Q7. The first term of an A.P. is -3 and tenth term is 24. Find the 20^{th} term.
- Q8. The seventh term of an A.P. is 32 and its 13^{th} term is 62. Find the A.P.
- Q9. The 6^{th} term of an A.P. is 5 times the first term and the eleventh term exceeds twice the 5^{th} term by 3. Find the 8^{th} term.
- Q10. The 7^{th} term of an A.P. is -4 and its 13^{th} term is -16. Find the A.P.
- Q11. The fifth term of an A.P. is thrice the second term and twelfth term exceeds twice the 6^{th} term by 1. Find the 16^{th} term.
- Q12. Find the 15^{th} term from the end of the A. P. 3, 5, 7, 9,....., 201.
- Q13. How many numbers of two digits are divisible by 6?
- Q14. Find the number of integers between 50 and 500 which are divisible by 7.
- Q15. If five times the 5^{th} term of an A.P. is equal to 8 times the 8^{th} term, show that its 13^{th} term is zero.
- Q16. The sum of 4^{th} and 8^{th} terms of an A.P. is 24 and the sum of the 6^{th} and 10^{th} terms is 34. Find the first term and the common difference of the A.P.
- Q17. Which term of the A.P. 3, 11, 19,..... is 195?
- Q18. Find sum of the following series:
(a) $72 + 70 + 68 + \dots + 40$ (b) $5 + 5.5 + 6 + \dots$ to 20 terms
(c) $-11 - 5 + 1 + \dots$ to 10 terms (d) $-25 - 21 - 17 \dots$ to 24 terms
- Q19. Find the sum of the: (a) first 50 even numbers (b) first 50 odd numbers
- Q20. Find the sum of all the natural numbers:
(a) between 100 and 1000 which are multiple of 5 (b) between 50 and 500 which are divisible by 7
(c) between 50 and 500 which are divisible by 3 and 5.
- Q21. How many terms of the sequence 18, 16, 14,..... should be taken so that their sum is zero?
- Q22. How many terms of an A.P. 1, 4, 7, are needed to give the sum 2380?
- Q23. If $S_n = 3n^2 + n$, find the A.P.
- Q24. Find the n^{th} term of an A.P., sum of whose n terms is $2n^2 + 3n$.
- Q25. The sum of first 9 terms of an A.P. is 171 and that of first 24 terms is 996. Find the first term and the common difference.
- Q26. Find the sum of first 25 terms of an A.P. whose n^{th} term is given by $t_n = 2 - 3n$.
- Q27. How many terms of A.P. -6, -11/2, -5,.... are needed to give the sum -25? Explain double answer.
- Q28. In an A.P., if the 5^{th} and 12^{th} terms are 30 and 65 respectively, what is the sum of first 20 terms?
- Q29. A man saves Rs 32,000 during first year, Rs 36,000 in the next year and Rs 40,000 in the third year. If he continues his savings in this sequence, in how many years will he save Rs 2,00,000?
- Q30. Find the middle term of A.P. 1, 4, 7,, 97.
- Q31. The sum of three numbers in A.P. is 36 and the sum of their squares is 450. Find the numbers.
- Q32. Find the first negative term of the A.P. 2000, 1990, 1980, 1970,.....
- Q33. 8. A club consists of members whose ages are in A.P. the common difference being 4 months. If the youngest member of the club is 8 year old and the sum of ages of all the members is 168 years, find the total number of members in the club.

Answers

- Ans1.(a) 8, 12, 16, 20,... (b) -90, -70, -50, -30,..... (c) 2, 3/2, 1, 1/2, 0,.... (d) $p, p - 3q, p - 6q, p - 9q, \dots$
Ans2. yes, 25 Ans3.(a) 2 (b) 3 (c) 7.5 Ans4. 50 Ans5. 15 Ans6. 9 Ans7. 54 Ans8. 2, 7, 12, 17,.....
Ans9. 33 Ans10. 8, 6, 4, 2, Ans11. 31 Ans12. 173 Ans13. 15 Ans14. 64 Ans15. -1/2, 5/2 Ans16. 25
Ans17. 25 Ans18.(a) 952 (b) 195 (c) 160 (d) 504 Ans19.(a) 2550 (b) 2500 Ans20.(a) 98450 (b) 17696 (c) 8325
Ans21. 19 Ans22. 40 Ans23. 4, 10, 16,..... Ans24. $4n + 1$ Ans25. 7, 3 Ans26. -925 Ans27. 20 or 5
Ans28. 1150 Ans29. 5 years Ans30. 49 Ans31. 9, 12, 15 Ans32. -10 Ans33. 16