MATHS

BOOKS - KALYANI MATHS (ASSAMESE ENGLISH)

ARITHMATIC PROGRESSION

Exercise

1. for the A.P. 5,9,13,17,.... which term of the progression is 81.

2. for the A.P. 5,9,13,17,.... find the 12th and 20th turm of the AP.

3. for the A.P. 21, 18, 15, .. which term of the progression is 0

4. for the A.P. 21, 18, 15, .. find t_{10} and t_{15}

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5. which term of the A.P 3,15,27, 39... will be 120 more than the 21st term (t_{21})

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6. which term of the A.P. 3,8,13,18,..... will be 55 more than its 20th term

7. which term of the A.P. 5,15, 25...... will be 130 more than its 31st term

8. find the 10th term from the end of the AP 4,9,14,.....,254.

9. find the 8th some from the end of the AP

7,10,13,....,184

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10. find the 6th term from the end of the A.P.

10, 7,4,.....,(- 62)

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11. Can 0 be a term of an A.P whose 11th term is

62 and 21st term is 32.

12. find the middle term of the A.P 10,7,4, ..., (-62)

13. the 6th term of an A.P. is -10 and its 10th term -26 determine the 15 term of the A.P.

14. the 7th term and 14 term of an A.P are - 9 and - 23 respectively. Determine the first term and common difference. which term of the A.P is -25

15. The 15 term and 24 of an A.P is 12 and 30 respectively.find the term whose sum with 16 term is zero.can 45 be a term of the AP? if so what is the term?

16. for for what values of n are the n term of the following two ap is the same 13 19,25,..... and 69,68,67,.....,? Also find this term

17. for what value of n the n term of two Ap's 63, 65, 67,..... and 3, 10, 17,..... are equal? Also find this term.

18. Two A.P.'s have the same common difference. The difference between 49th term is 50. what is the difference between 100 term.

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19. which term of the sequence 114, 109, 104,..... is the first negative term.

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20. which term of the A.P. 27,24,21,.... is the first

negative term.

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21. how many multiples of 8 lie between 100

and 500

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22. how many multiples of 7 lie between 100

and 1000

23. In a given A.P. it pth term is q and qth term is p, then show that the nth term is $(p + q - n)$.

24. if m times the mth term of an A.P. is equal to n times the nth term and $m \neq n$ show that $(m + n)$th is zero.

25. If the qth term of an A.P is twice the pth term and rth term is twice the qth term. prove that $2p + r = 3q$

26. the following are the nth term of certain sequence. Determine whether they are A.P. or not . If it is so find the first term and CD.

$T_n = n^2 - 1$

27. the following are the nth term of certain sequence. Determine whether they are A.P. or not . If it is so find the first term and CD.

$$T_n = 2n + 3$$

28. the following are the nth term of certain sequence. Determine whether they are A.P. or

not . If it is so find the first term and CD.

$$T_n = 3n + 5$$

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29. the following are the nth term of certain sequence. Determine whether they are A.P. or not . If it is so find the first term and CD.

$$T_n = n^2 + n + 2$$

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30. the following are the nth term of certain sequence. Determine whether they are A.P. or not . If it is so find the first term and CD.

$$T_n = 3n - 1$$

31. the following are the nth term of certain sequence. Determine whether they are A.P. or not . If it is so find the first term and CD.

$$T_n = \frac{n^2 + 1}{2}$$

32. Find the sum of positive integers less than 400.

33. Find the sum $5 + 17 + 29 + 41 ......$upto 20th term.

34. Find the sum $2 + 3\dfrac{1}{2} + 5 + 6\dfrac{1}{2}+$....... upto 25th term.

35. Find the sum $0.5 + 0.25 + 0 - 0.25$....... upto 16th term.

36. Find the sum $\left(1 - \dfrac{1}{n}\right) + \left(1 - \dfrac{2}{n}\right) + \left(1 - \dfrac{3}{n}\right)$

+........upto n terms.

37. If $a_1 = 104, a_{24} = 196,$find $C.D.(=d)$

and sum upto 24th term$(=S_{24})$

38. If the last term is 994,the sum of the A.P

series whose first term is a is 70,336.If the

number of terms is 128. Find a.

39. Find the number of terms of the A.P. 63,60,57......so that their sum is 693.Explain the double answer.

40. Find the number of terms of A.P. 64,60,56.....so that their sum is 544.

41. How many terms of the A.P. 9,17,25.....must be taken so that their sum is 636.

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42. Find the sum of all the natural number less than 100 which divisible by 6.

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43. Find the sum of all three digit natural number which is divisible by 13.

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44. In an A.P.,the sum of first n terms is $3\dfrac{n^2}{2} + 5\dfrac{n}{2}$.Find its 25th term.Also determine its first term and C.D.

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45. In an A.P.,the sum of first n terms is $5\dfrac{n^2}{2} + 3\dfrac{n}{2}$.Find its 20th term.

46. Find the sum of all three digit numbers which leave the remainder 3 when divided by 5.

47. Find the sum of all two digit natural numbers which when divided by 3 yield 1 as remainder.

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48. Find the sum of all two digit numbers greater than 50 which when divided by 7 leave a remainder of 4.

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49. If the sum of first n,2n,3n terms of an A.P. be S_1, S_2 and S_3 respectively then prove that

$$S_3 = 3(S_2 - S_1)$$

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50. If the sum of first n,2n,3n terms of an A.P. be S_1, S_2 and S_3 respectively then prove that

$$S_1 + S_3 = 2S_2$$

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51. A sum of ₹700 is to be used to given seven cash prizes to students of a school for their overall academic performance.If each prize is ₹20 less than its preceding prize,find the value of each of the prizes.

52. A contract on construction job specifies a penalty for delay of completion beyond a certain date is as follows,

₹200 for 1st day,₹250 for 2nd day,₹300 for 3rd

day and so on.If the contractor pays 27,750 as penalty,find the number of days for which the work is delayed.

53. 40 coins are placed in a straight line on a ground.The distance between any two consecutive coins is 10m.How far must a person travel to bring them one by one to a basket placed 10m behind the first coin?

54. For the A.P. $\dfrac{3}{2},\ \dfrac{1}{2},\ -\dfrac{1}{2}, -\dfrac{3}{2}$ write the first term and common difference.

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55. Find K if 10,K,-2 are in A.P.

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56. Are 4,4,4...in A.P.

57. If a be the first term and d be the common difference write the three consecuitive terms,

58. If a be the first term and d be the common difference write the four consecuitive term

59. Fill up the gap

2,5,8,....,14,17,....are in A.P.

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60. Fill the gap

The nth term of an A.P.whose first term is a and common difference is d is....

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61. Fill the gap

The sum of n terms of an A.P. whose first term is a and common difference is d is

62. Fill the gap

$$T_n = S_n - \ldots$$

63. Fill the gap

30th ter of an A.P. 10,7,4..is......

64. Choose the correct one

If angles of a triangle are in A.P. then one of the angle is

A. 40

B. 50

C. 60

D. 90

Answer:

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65. Choose the correct one

Which of the following is not an A.P.

(i)1,4,7....

(ii)(-5),(-2),1,4.....

(iii)3,7,12,18.....

(iv)11,14,17,20...

A. 1,4,7....

B. (-5),(-2),1,4.....

C. 3,7,12,18.....

D. 11,14,17,20...

Answer:

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66. Chosse the correct one

The sum of first 100 natural number is

    A. 5050

    B. 2525

    C. 505

    D. None

Answer:

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67. Choose the correct one

If 6 a,b,O are in A.P.then a+b

A. 4

B. 6

C. 2

D. None

Answer:

68. Chosse the correct one

If the sum of the A.P. 3,7,11...is 210 the number of term is

A. 15

B. 10

C. 18

D. None

Answer: