1. Find the sum of the first 22 terms of the A.P. : 8, 3, −2, ...

2. How many terms of the A.P. :

   24, 21, 18, ... must be taken so that their sum is 78 ?

3. Find the sum of 28 terms of an A.P. whose n^{th} term is $8n - 5$.

4. Find the sum of :

   (i) all odd natural numbers less than 50.

   (ii) first 12 natural numbers each of which is a multiple of 7.

5. Find the sum of first 51 terms of an A.P. whose 2^{nd} and 3^{rd} terms are 14 and 18 respectively.

6. The sum of first 7 terms of an A.P. is 49 and that of first 17 terms of it is 289. Find the sum of first n terms.

7. The first term of an A.P. is 5, the last term is 45 and the sum of its terms is 1000. Find the number of terms and the common difference of the A.P.

8. Find the sum of all natural numbers between 250 and 1000 which are divisible by 9.

9. The first and the last terms of an A.P. are 34 and 700 respectively. If the common difference is 18, how many terms are there and what is their sum ?

10. In an A.P., the first term is 25, n^{th} term is −17 and the sum of n terms is 132. Find n and the common difference.

11. If the 8^{th} term of an A.P. is 37 and the 15^{th} term is 15 more than the 12^{th} term, find the A.P.

    Also, find the sum of first 20 terms of this A.P.

12. Find the sum of all multiples of 7 lying between 300 and 700.

13. The sum of n natural numbers is $5n^2 + 4n$. Find its 8^{th} term.

14. The fourth term of an A.P. is 11 and the eighth term exceeds twice the fourth term by 5. Find the A.P. and the sum of first 50 terms.

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1. Find three numbers in A.P. whose sum is 24 and whose product is 440.

2. The sum of three consecutive terms of an A.P. is 21 and the sum of their squares is 165. Find these terms.

3. The angles of a quadrilateral are in A.P. with common difference 20°. Find its angles.

4. Divide 96 into four parts which are in A.P. and the ratio between product of their means to product of their extremes is 15 : 7.

5. Find five numbers in A.P. whose sum is $12\frac{1}{2}$ and the ratio of the first to the last terms is 2 : 3.

6. Split 207 into three parts such that these parts are in A.P. and the product of the two smaller parts is 4623.

7. The sum of three numbers in A.P. is 15 and the sum of the squares of the extreme terms is 58. Find the numbers.

8. Find four numbers in A.P. whose sum is 20 and the sum of whose squares is 120.

9. Insert one arithmetic mean between 3 and 13.

10. The angles of a polygon are in A.P. with common difference 5°. If the smallest angle is 120°, find the number of sides of the polygon.

    Let the number of sides be n

    $\therefore \quad \frac{n}{2}[2 \times 120° + (n - 1) \times 5°]$

    $= (2n - 4) \times 90°$

11. $\frac{1}{a}, \frac{1}{b}$ and $\frac{1}{c}$ are in A.P.

    Show that : bc, ca and ab are also in A.P.

    Multiply each given term by abc.