

Arithmetic Progression ## Chapter - 5 ## Assignment

1. If the sum of first n term of an AP is $2n^2 + 3n$, then its second term. (cbse-2025)
2. A school is organizing a charity run to raise funds for a local hospital. The run is planned as a series of rounds a track, with each round being 300 metres. To make the event more challenging and engaging the organize decide to increase the distance of each subsequent round by 50 metres. for example, the second round will be 350 metres, the third round will be 400 metres. and so on. The total number of rounds planned is 10.
- (i) Write the fourth, fifth and sixth term of the A.P so formed.
 - (ii) Determine the distance of the 8th round. (cbse-2025)
 - (iii) find the total distance run after completing all 10 round
3. A sum of 2000 is invested at 7% per annum simple interest. Calculate the interest at the end of 1st, and, 3rd year. Do these interests form an AP? if so find the interest at the end of the 27th year. (cbse-2025)
4. Assertion (A): Common diff. of the A.P : 5, 1, -3, -7 --- is 4
Reason (R): Common diff. of the A.P : $a_1, a_2, a_3 \dots a_n$ is obtained by $d = a_n - a_{n-1}$ (cbse-2025)
5. The 10th term of the A.P 5, $\frac{19}{4}$, $\frac{9}{2}$, $\frac{17}{4}$ --- is (cbse-2025)
6. Cable cars at hill stations are one of the major tourist attraction. on a hill station. the length of Cable Car ride from base point to top most point on the hill is 5000m. Poles are installed at equal intervals on the way to provide support to the cables on which Car moves. The distance of first pole from the base point is 200m and subsequent poles are installed at equal interval of 150m. distance of last pole from the top is 300m.
- (i) find the distance of 10th pole from the base. (cbse-2025)
 - (ii) find the distance b/w 15th pole and 25th pole.
 - (iii) find the total no. of poles installed along the entire Journey.

7. Assertion (A)! for an A.P. $3, 6, 9, \dots, 198$. 10th term from the end is 168.

Reason (R)! If 'a' and 'l' are the first term and last term of an A.P. with Common diff. 'd' then 'nth' term from the end of the given A.P. is $l - (n-1)d$. (cbse-2025)

8. In order to organise, Annual Sports Day, a school prepared an eight lane running track, with an integrated football field inside the track area as shown below.

The length of innermost lane of the track is 400m and each subsequent lane 7.6m longer than the preceding lane.

(i) What is the length of the 6th lane.

(ii) How long is the 8th lane than that of 4th lane.

(iii) A student took one round each in lane 4 to lane 8. Find the total distance covered by the student (cbse-2025)

9. The sum of first and eight term of an A.P. is 32 and their product is 60. find the first term and Common diff. of the A.P. Hence, also find the sum of its first 20 term (cbse-2024)

10. In an A.P. the sum of three consecutive term is 24 and the sum of their squares is 194. find the No. (cbse-2024)

11. If the sum of the first 14 term of an A.P. is 1050 and the first term is 10. then find the 20th term and the nth term (cbse-2024)

12. The first term of an A.P. is 5, the last term is 45 and the sum of all the term is 400. find the no. of term and Common diff. (cbse-2024)

13. The ratio of the 11th term to 17th term of an A.P. is $3:4$. find the ratio of 5th term to 21st term of the same A.P. Also, find the ratio of the sum of first 5 term to that of first 21 term. (cbse-2023)

14. How many term of the A.P. $45, 39, 33, \dots$ must be taken so that their sum is 180? explain the double answers. (cbse-2023)

15. How many term are there is an A.P. whose first and fifth term are -14 and 2, respectively, and the last term is 62 (cbse-2023)