Mathematics

Practice Test Paper 8

(Chapter 5: Arithmetic Progressions)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Use algebraic methods where required. Use of calculators is not allowed.

SECTION A

(5 questions × 1 mark = 5 marks)

1. If $S_n = n^2$, the tenth term is:

(A) 19 (B) 20

(C) 100 (D) 81

2. The seventh term from the end of 2, 5, 8, …, 59 is:

(A) 38 (B) 44

(C) 47 (D) 41

3. Which list is not an AP?

(A) −8, −3, 2, …

(B) 1, 4, 9, …

(C) 0.5, 1, 1.5, …

(D) 7, 7, 7, …

4. If the first term is p and common difference is q, the tenth term is:

(A) $10p + q$

(B) $p + 10q$

(C) $p + 9q$

(D) $q + 9p$

5. The sum of the first eight terms of 3, 6, 9, … is:

(A) 108 (B) 96

(C) 120 (D) 72

SECTION B

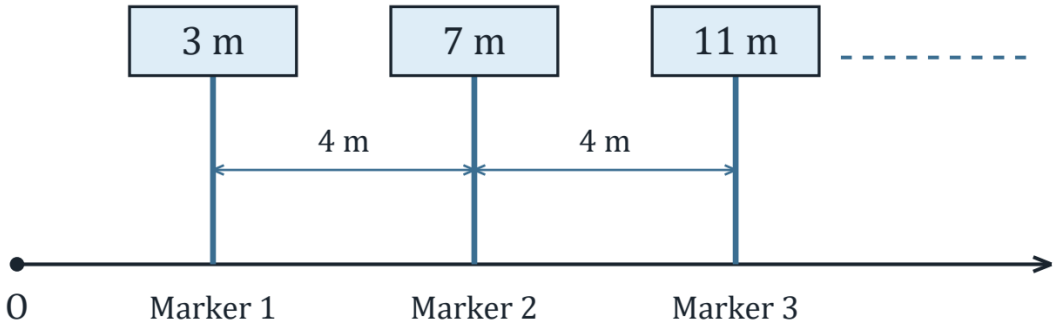
(4 questions × 2 marks = 8 marks)

6. Find the sum 34 + 32 + 30 + … + 10.

7. The sum of the first n terms of an AP is $S_n = 3n^2 - 4n$. Find its nth term.

8. Insert three numbers between 6 and 26 so that all five numbers form an AP.

9. The distance markers continue at equal gaps as shown. Find the twelfth marker's distance from O.



SECTION C

(3 questions × 3 marks = 9 marks)

10. An AP has $a_5 + a_9 = 30$ and $a_{25} = 3a_8$. Find its first term and common difference.

11. The sum of the first four terms of an AP is 40 and that of its first 14 terms is 280. Find a formula for S_n.

12. Find the sum of all integers strictly between 50 and 500 that are divisible by 7.

SECTION D

(Application Based Question - 3 marks)

13. A pump delivers 60 litres in its first hour, 75 litres in its second, 90 litres in its third, and continues increasing its hourly delivery by the same amount.

(i) Find the increase in delivery each hour.

(ii) Find the amount delivered during hour 6.

(iii) Find the total delivered in six hours.