Mathematics

Practice Test Paper 4

(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. The first term of the AP defined by $a_n = 7 - 2n$ is:

(A) 7
(B) −2
(C) 9
(D) 5

2. For the AP $\frac{3}{2}, \frac{1}{2}, -\frac{1}{2}, \ldots$, d equals:

(A) −1 (B) 1
(C) −2 (D) $\frac{1}{2}$

3. Which expression gives the nth positive odd integer?

(A) $2n$
(B) $n + 1$
(C) $2n - 1$
(D) $2n + 1$

4. The middle term of the three-term AP 8, x, 20 is:

(A) 12 (B) 14
(C) 16 (D) 28

5. An AP has $a_4 = 18$ and $a_5 = 23$. Its common difference is:

(A) 18 (B) 23
(C) −5 (D) 5

SECTION B

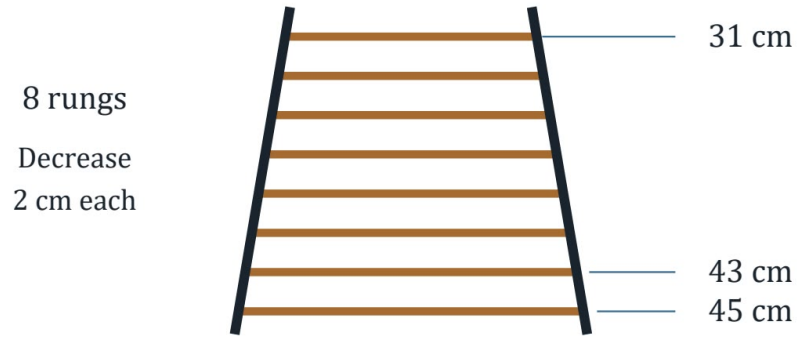
(4 questions × 2 marks = 8 marks)

6. Find the sum of the first 11 terms of the AP $\frac{1}{15}, \frac{1}{12}, \frac{1}{10}, \ldots$.

7. Find the number of terms in the finite AP 7, 13, 19, …, 205.

8. The nth term of an AP is $a_n = 5n - 1$. Find its first term, common difference and the sum of its first 20 terms.

9. The ladder has eight rungs whose lengths decrease uniformly as shown. Find the sixth rung's length from the bottom and the total length of all eight rungs.



SECTION C

(3 questions × 3 marks = 9 marks)

10. In an AP, the sum of the fourth and eighth terms is 24 and the sum of the sixth and tenth terms is 44. Find the first three terms.

11. How many terms of the AP 9, 17, 25, … have sum 636?

12. Ramkali saves ₹5 in week 1 and increases her weekly savings by ₹1.75 each week. In which week does she save ₹20.75? Find her total savings through that week.

SECTION D

(Application Based Question - 3 marks)

13. A taxi charges ₹15 for the first kilometre and ₹8 for each additional kilometre. Consider journeys of whole numbers of kilometres.

(i) Write the fares for 1 km, 2 km and 3 km.

(ii) Find the fare for a 12 km journey.

(iii) How far can one travel for ₹151?