Mathematics

Practice Test Paper 7

(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 three terms of an AP are 3y − 1, 3y + 5 and 5y + 1. Then y equals:

(A) 3 (B) 4

(C) 5 (D) 2

2. The eighth term of the AP 1, 4, 7, … is:

(A) 22

(B) 25

(C) 21

(D) 24

3. If $a_3 + a_7 = 0$ in an AP, a_5 is:

(A) 5 (B) −5

(C) 1 (D) 0

4. The sum of the first six terms of 5, 5, 5, … is:

(A) 25 (B) 30

(C) 35 (D) 36

5. Which formula gives the nth term of 5, 11, 17, …?

(A) $5n + 1$

(B) $6n + 1$

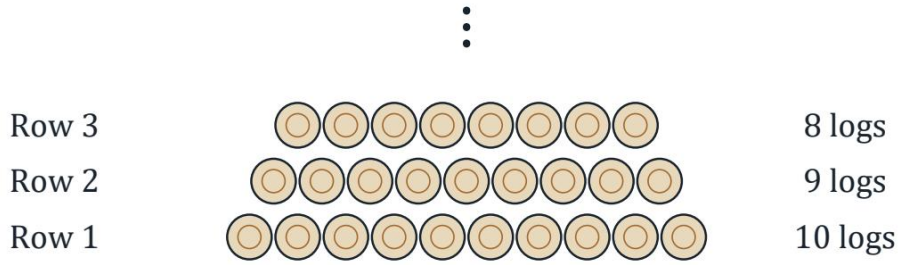
(C) $6n - 1$

(D) $5n - 1$

SECTION B

(4 questions × 2 marks = 8 marks)

6. The log stack continues upwards with one fewer log in each row. If it has six rows, find the top-row count and the total number of logs.



7. How many multiples of 4 lie strictly between 10 and 250?

8. Find the sum of the first 40 positive integers divisible by 7.

9. Show that $x + 2$, $2x - 1$ and $3x - 4$ form an AP for every real x. When is it increasing?

SECTION C

(3 questions × 3 marks = 9 marks)

10. The sum of the fifth and ninth terms of an AP is 72. The sum of its seventh and twelfth terms is 97. Find the AP.

11. The sums of the first 7 and first 17 terms of an AP are 49 and 289. Find the sum of its first 20 terms.

12. The first seven terms of an AP sum to 63 and the next seven sum to 161. Find the AP and its fourteenth term.

SECTION D

(Application Based Question - 3 marks)

13. Lamp posts stand along a straight road. The first is 12 m from a gate, and each successive post is 8 m farther from the gate than the previous one. There are 15 posts.

(i) State the common difference of their distances from the gate.

(ii) Find the last post's distance from the gate.

(iii) Which post is 108 m from the gate?