

PRINCIPAL SAAB  
**Periodic Assessment 1 (PA-1) — Answer Key**

**Class IX | Mathematics (041) | Periodic Assessment 1 | Session 2026-27**

**Time: 40 minutes | Maximum Marks: 25 | Answer Key**

This is the third PA-1 practice paper for Class 9 Maths, based on the new syllabus (Ganita Manjari Part 1, 2026-27): Chapter 1 (Orienting Yourself: The Use of Coordinates) and Chapter 2 (Introduction to Linear Polynomials). Note: the whole Class 9 Maths textbook has changed this year, so this paper covers only the first 2 chapters (the later chapters are not part of it yet).

### General Instructions

- Time: 40 minutes | Maximum Marks: 25
- Chapter coverage: Ch 1 Orienting Yourself: The Use of Coordinates, Ch 2 Introduction to Linear Polynomials (Ganita Manjari Part 1, new 2026-27 textbook).
- Four sections — A (5 × 1 mark), B (4 × 2 marks), C (3 × 3 marks), D (1 case-study of 3 marks).
- All questions are compulsory. There is no internal choice.

### Marking Scheme

Award marks only for a correct and complete answer to the part being marked. Where a question says "any two" or "any three", a student needs only that many correct points; the extra points below are given so that a range of correct answers can be marked fairly.

### Section A

- Q1 — (C) III.  $x = -5$  (negative) and  $y = -8$  (negative) — when both coordinates are negative, the point lies in Quadrant III.
- Q2 — (B) On the y-axis. The x-coordinate is 0, so the point lies on the y-axis.
- Q3 — (B)  $(-3, -9)$ . Reflecting in the y-axis maps  $(x, y) \rightarrow (-x, y)$  — only the sign of x changes, y stays the same. So  $(3, -9) \rightarrow (-3, -9)$ .
- Q4 — (B) 1. The highest power of x is 1, so the degree is 1 (a linear polynomial).
- Q5 — (C)  $3x - 8$ . This is a degree-1 polynomial ( $a = 3 \neq 0$ ). Option (A) has degree 2, (B) is a constant (degree 0), and (D) has degree 3.

### Section B

- Q6.  $(-2, 5)$ : x is negative and y is positive  $\rightarrow$  Quadrant II. Reflecting in the x-axis maps  $(x, y) \rightarrow (x, -y)$ , so  $(-2, 5) \rightarrow (-2, -5)$ .
- Q7. Lying on the y-axis means the abscissa  $(x) = 0$ :  $a - 2 = 0 \Rightarrow a = 2$ . Ordinate  $= 2(2) + 1 = 5$ . Therefore  $P = (0, 5)$ .
- Q8.  $9x - 27 = 0 \Rightarrow 9x = 27 \Rightarrow x = 3$ . Check:  $p(3) = 9(3) - 27 = 27 - 27 = 0 \checkmark$ .
- Q9. (i)  $y = 15x + 50$ . (ii) At  $x = 8$ :  $y = 15(8) + 50 = 120 + 50 = ₹170$ .

### Section C

- Q10. Reflect  $P(-6, 4)$  in the x-axis:  $(x, y) \rightarrow (x, -y) \Rightarrow (-6, -4)$ . Now reflect this new point  $(-6, -4)$  in the y-axis:  $(x, y) \rightarrow (-x, y) \Rightarrow (6, -4)$ . Therefore  $Q = (6, -4)$ , and since x is positive and y is negative, it lies in Quadrant IV.
- Q11. (i) At  $x = 0$ :  $h(0) = 2(0) + 10 = 10$  cm. (ii)  $30 = 2x + 10 \Rightarrow 2x = 20 \Rightarrow x = 10$  weeks. (iii)  $25 = 2x + 10 \Rightarrow 2x = 15 \Rightarrow x = 7.5$ . Since x is not a whole number (7.5 weeks is not a complete week), the height will never be 25 cm at the end of any whole week.
- Q12. For a linear polynomial the coefficient of x cannot be zero:  $2k - 3 \neq 0 \Rightarrow k \neq 3/2$ . Zero:  $(2k - 3)x + 5 = 0 \Rightarrow x = -5 / (2k - 3)$ . Check ( $k = 2$ ): coefficient  $= 2(2) - 3 = 1$ , polynomial  $= x + 5$ , zero  $= -5$ . From the formula:  $-5 / (2(2) - 3) = -5 / 1 = -5 \checkmark$ .

### Section D

- Q13 (i). At  $x = 3$ :  $y = 2(3) + 1 = 7$ . Point  $(3, 7)$ : x is positive and y is positive  $\rightarrow$  Quadrant I.
- Q13 (ii). Zero:  $0 = 2x + 1 \Rightarrow 2x = -1 \Rightarrow x = -1/2$ .
- Q13 (iii). Reflecting the point  $(3, 7)$  in the x-axis maps  $(x, y) \rightarrow (x, -y)$ , so the new y-coordinate is  $-7$ .

### Apna Score Kaise Padhein

- 20-25: both chapters are strong.
- 14-19: you need more practice with reflections or with finding zeroes.
- Below 13: read the chapter notes again, then attempt this paper once more after 3 days.

Chapter notes are here: Chapter 1 — Coordinates and Chapter 2 — Linear Polynomials. More practice papers are here: Unit Test & Practice Paper Hub.

Kaizen: today, solve just that one question you got wrong — without looking at the answer. One small improvement every day, and the difference will be clear by PA-1.

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