

Mathematics — Ganita Manjari

Chapter 2 Test 5

Introduction to Linear Polynomials

Class IX | 2026-27

Time Allowed: 45 Minutes

Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. Choose one option in A; show working in B-D.
2. Show the main steps and give reasons where asked. Calculators are not allowed.
3. Read graph scales carefully and state units where appropriate.

SECTION A

(5 questions × 1 mark = 5 marks)

1. After simplifying $3x^2 + 5x - 3x^2 + 4$, its degree is:

- | | |
|-------|-------|
| (A) 2 | (B) 3 |
| (C) 0 | (D) 1 |

2. The coefficient of x in $x - 8$ is:

- | | |
|--------|-------|
| (A) 1 | (B) 0 |
| (C) -8 | (D) 8 |

3. Which point does NOT lie on $y = x + 2$?

- | | |
|-------------|------------|
| (A) (0, 2) | (B) (3, 6) |
| (C) (-2, 0) | (D) (1, 3) |

4. The zero of the polynomial $4x + 12$ is:

- | | |
|--------|---------|
| (A) 3 | (B) 12 |
| (C) -3 | (D) -12 |

5. With equal scales on both axes, which graph is steepest?

- (A) $y = x$
(B) $y = 2x$
(C) $y = \frac{1}{2}x$
(D) $y = 5x$

SECTION B

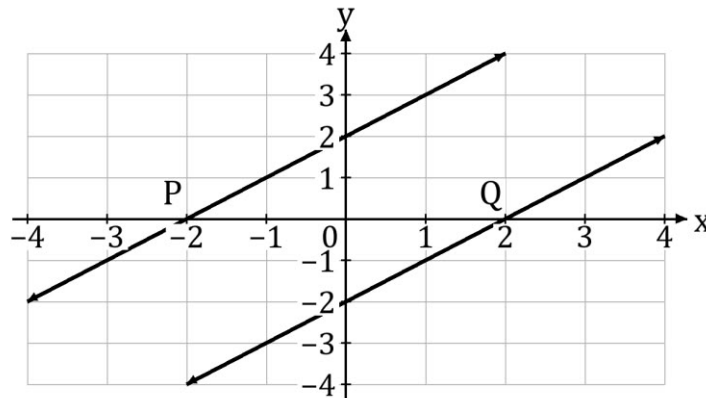
(4 questions $\times$ 2 marks = 8 marks)

6. Evaluate $p(x) = \frac{5}{2}x - 1$ at $x = -4$ and at $x = \frac{2}{5}$.
7. A savings account is modelled by $S(n) = 900 + 175n$, where n is the number of months. Find the initial savings and the increase from month 4 to month 9.
8. A cuboid has a base 8 cm long and 5 cm wide. Express its volume as a polynomial in height h . Find h if the volume is 260 cm^3 .
9. Solve $\frac{3}{4}x + \frac{5}{6} = \frac{7}{3}$.

SECTION C

(3 questions $\times$ 3 marks = 9 marks)

10. A growing pattern has $T(n) = 7n - 2$ tiles at stage n , beginning with stage 1. Find the counts at stages 6 and 15. Can a stage contain exactly 100 tiles? Explain.
11. The two lines are labelled P and Q. Read their y-intercepts, find an equation for each line, and explain why the lines are parallel.



12. A rectangle's length is 5 cm more than twice its width. Its perimeter is 46 cm. Find its dimensions and area.

SECTION D

(1 application question $\times$ 3 marks = 3 marks)

13. On a temperature scale, the reading L depends linearly on Celsius C . The readings are $L = 10$ at $C = 0$ and $L = 70$ at $C = 40$. Find the conversion rule and the Celsius temperature when $L = 55$.