

Mathematics — Ganita Manjari

Chapter 2 Test 10

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. The degree of $6x^3 - 4x^2 + 2x$ is:

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

2. In $15 - x$, the coefficient of x is:

- | | |
|--------|---------|
| (A) 1 | (B) 15 |
| (C) -1 | (D) -15 |

3. For $R(t) = 160 - 9t$, the amount lost in 3 time units is:

- (A) 9
(B) 151
(C) 133
(D) 27

4. The slope of the line $2x + 4y = 12$ is:

- | | |
|--------------------|-------------------|
| (A) $-\frac{1}{2}$ | (B) $\frac{1}{2}$ |
| (C) 3 | (D) -2 |

5. The graph of $y = 2x - 8$ meets the x-axis at:

- | | |
|-------------|-------------|
| (A) (0, -8) | (B) (4, 0) |
| (C) (0, 4) | (D) (-4, 0) |

SECTION B

(4 questions × 2 marks = 8 marks)

6. For $p(x) = kx + 3$, it is given that $p(-2) = 11$. Find k and $p(5)$.

7. Find the values of $f(x) = x^3 - 2x + 6$ at $x = 1$ and $x = -1$.
8. Rewrite $0.5y = 1.5x - 2$ as $y = ax + b$. State the slope and y-intercept.
9. A rectangle has a fixed length of 12 cm and width w cm. Write its perimeter as a linear polynomial in w . Find w if the perimeter is 39 cm.

SECTION C

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

10. For inputs 0, 1, 2 and 3, rule A gives outputs 2, 5, 8 and 11, while rule B gives 2, 5, 10 and 17. Which set is consistent with a linear rule? Find that rule and explain why the other set is not linear.
11. A museum charges a fixed group booking fee of ₹250 plus ₹60 per student. A group pays ₹1390. Find the number of students. If the booking fee stays the same and the ticket price rises by ₹5, find the new bill for that group.
12. A linear polynomial p has zero -2 and satisfies $p(3) = 20$. Find $p(x)$, its y-intercept and $p(-5)$.

SECTION D

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

13. The graph shows a delivery charge C for distance d . Find the fixed charge and the charge per kilometre. How much is charged for 4 km, and what distance corresponds to ₹175?

