

Mathematics — Ganita Manjari

Chapter 2 Test 4

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. In $8x^4 - 3x^3 + 2x - 1$, the coefficient of x^3 is:

- (A) -3 (B) 3
(C) 8 (D) 2

2. How many non-zero terms are present in $5r^3 - 2r + 8$?

- (A) 2 (B) 3
(C) 5 (D) 8

3. If $h(t) = 7t - 12$, then $h(0)$ equals:

- (A) 7 (B) 0
(C) -12 (D) 12

4. When x increases by 2, the value of $y = \frac{3}{2}x + 4$ increases by:

- (A) 2 (B) 4
(C) $\frac{3}{2}$ (D) 3

5. Which pair of lines has the same y-intercept?

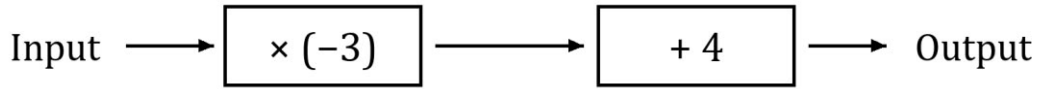
- (A) $y = 2x - 5$ and $y = -x - 5$
(B) $y = 2x + 1$ and $y = 2x + 3$
(C) $y = x$ and $y = x + 1$
(D) $y = -3x + 2$ and $y = 3x - 2$

SECTION B

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

6. For $g(t) = 2t^3 - t^2 + 5$, write $g(a)$ and evaluate $g(-2)$.

7. Follow the operations shown. Find the output for input -2 and the input that gives output -11 .



8. A 28 cm wire forms a rectangle with one side x cm. Express the other side and the area in terms of x . State the degree of the area polynomial.

9. Find the coordinates where $y = 5x - 10$ meets the two coordinate axes.

SECTION C

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

10. The graph of $f(x) = ax + b$ passes through $(2, 7)$ and $(8, 16)$. Find $f(x)$, and determine whether $(6, 13)$ lies on it.

11. Two positive numbers differ by 48 and are in the ratio $3 : 7$. Find them using a linear equation.

12. Compare $p(x) = 4x - 3$ and $q(x) = -2x - 3$. Find their common point, state which graph rises as x increases, and calculate $p(2) - q(2)$.

SECTION D

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

13. A taxi charges ₹40 for the first 2 km and ₹18 for every additional kilometre. Write the fare for a journey of d km, where $d \geq 2$. Find the fare for 11 km and the distance for a fare of ₹166.