

Mathematics — Ganita Manjari

Chapter 2 Test 9

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 coefficient of the highest-degree term in $-8v^3 + 5v^2 - 2$ is:

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

2. In $y = ax + b$, the y-intercept is determined by:

- (A) b (B) a
(C) $a + b$ (D) ab

3. The value of $3x + 2$ at $x = \frac{2}{3}$ is:

- (A) 2 (B) 4
(C) 3 (D) 5

4. For $y = kx + 2$ to decrease as x increases, k must be:

- (A) zero
(B) positive
(C) negative
(D) equal to 2

5. A pattern has $P(n) = 5n + 3$ pieces at stage n. The increase from stage n to stage $n + 2$ is:

- (A) 5 (B) 8
(C) 13 (D) 10

SECTION B

(4 questions × 2 marks = 8 marks)

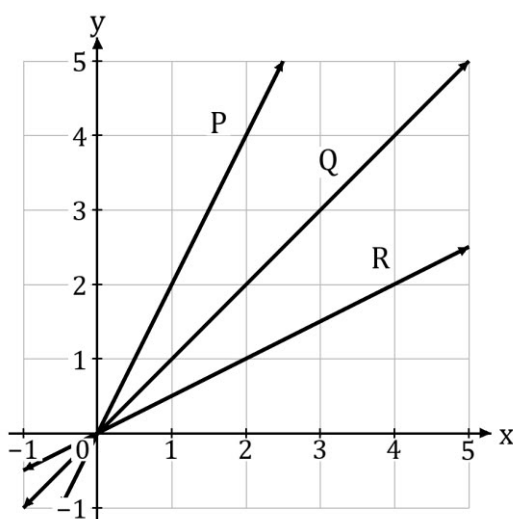
6. For $p(t) = 4t^2 - 3t + 2$, write p(a) and find $p(1) - p(0)$.

7. A square has side x cm. A pupil calls its area a linear polynomial in x because there is only one variable. Is the pupil correct? Explain using the degree.
8. A linear graph passes through the origin and $(3, -12)$. Find its equation and its output at $x = -2$.
9. Let $f(x) = 7x - 6$ and $g(x) = 2x + 9$. Find the input for which both give the same output, and state that output.

SECTION C

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

10. Match P, Q and R with $y = 2x$, $y = x$ and $y = \frac{1}{2}x$. Explain the order of their steepness.



11. Two linear polynomials satisfy $p(x) + q(x) = 8x - 2$ and $p(x) - q(x) = 6$. Find p and q , and explain the relation between their graphs.
12. One brother is 7 years older than the other. After 4 years, the sum of their ages will be 41 years. Find their present ages and check the result.

SECTION D

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

13. A constant force does 84 joules of work over 7 metres, and the work is zero at distance zero. Assume work is linear in distance. Find the work rule, the work over 11 metres and the distance for 180 joules.