QUICK DRILL · CBSE CLASS 9

Polynomials

Mathematics · Chapter 2 · 15 MCQs · 20 minutes · PYQ-tagged with time budgets

DATE	TOTAL MARKS	DURATION	MARKING	TARGET
_____	15	20 min	+1 / 0	⩾ 12/15

OBJECTIVES

Reinforce the four core topics of Polynomials via 15 PYQ-derived MCQs. Identify weak sub-topics via concept-node IDs (see answer key). Build per-question time budget habit.

INSTRUCTIONS

Attempt all 15. Time budget shown per Q (use it as pacing guide). Mark answers (A/B/C/D) in the margin. Answer key + explanations on the last page. **Don't peek — score yourself honestly.**

SECTION · QUICK DRILL

Q 1–15 · 20 MIN

Q1. Which of the following is a polynomial in one variable?

(A) x + 1/x
(B) root x + 3
(C) x^3 - 2x + 5
(D) x^(-2) + 1

PYQ 2019 · Delhi · 1m · ? 30s

Q2. Degree of the polynomial 4x^4 + 7x^2 - 5x + 12 is

(A) 2
(B) 3
(C) 4
(D) 12

PYQ 2020 · Outside Delhi · 1m · ? 30s

Q3. Which is a trinomial?

(A) 3x
(B) x^2 + 1
(C) x^2 + 3x + 4
(D) x^5

PYQ 2021 · Delhi · 1m · ? 30s

Q4. Zero of the polynomial p(x) = 2x + 5 is

(A) -5/2
(B) 5/2
(C) -2/5
(D) 2/5

PYQ 2018 · Delhi · 1m · ? 30s

Q5. Remainder when p(x) = x^3 - 3x^2 + 3x - 1 is divided by (x - 1)

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

PYQ 2022 · Delhi · 1m · ? 45s

Q6. If p(x) = x^2 - 3x + 2, then (x - 1) is

(A) a factor
(B) not a factor
(C) the zero
(D) the remainder

PYQ 2023 · Outside Delhi · 1m · ? 45s

Q7. (x + y)^2 - (x - y)^2 equals

(A) 2xy
(B) 4xy
(C) x^2 + y^2
(D) 2(x^2 + y^2)

PYQ 2019 · Outside Delhi · 1m · ? 45s

Q8. Value of (102)^2 using identity is

(A) 10404
(B) 10204
(C) 10044
(D) 10440

PYQ 2020 · Delhi · 2m · ? 60s

Q9. Factorise: x^2 - 5x + 6

(A) (x-1)(x-6)
(B) (x-2)(x-3)
(C) (x+2)(x+3)
(D) (x-1)(x-5)

PYQ 2021 · Delhi · 2m · ? 60s

Q10. x^3 + y^3 equals

(A) (x+y)(x^2+xy+y^2)
(B) (x+y)(x^2-xy+y^2)
(C) (x-y)(x^2+xy+y^2)
(D) (x+y)^3

PYQ 2022 · Outside Delhi · 1m · ? 30s

Q11. If x + y + z = 0 then x^3 + y^3 + z^3 equals

(A) 0 **(B)** xyz
(C) 3xyz **(D)** x+y+z

PYQ 2023 · Delhi · 2m · 45s

Q12. (x+y)^3 equals

(A) x^3 + y^3 **(B)** x^3 + y^3 + 3xy(x+y)
(C) x^3 + y^3 + xy **(D)** x^3 - y^3 + 3xy(x+y)

PYQ 2018 · Outside Delhi · 1m · 30s

Q13. Remainder when x^3 + 3x^2 + 3x + 1 is divided by (x + 1)

(A) 0 **(B)** 1
(C) 8 **(D)** 2

PYQ 2024 · Delhi · 1m · 45s

Q14. Which of the following is NOT a polynomial?

(A) 3 **(B)** x^2 + 2x + 1
(C) 2x + 3/x **(D)** x^7

PYQ 2020 · Delhi · 1m · 30s

Q15. In x^3 - 23x^2 + 142x - 120, one factor is

(A) (x-1) **(B)** (x+1)
(C) (x-2) **(D)** (x-5)

PYQ 2024 · Delhi · 3m · 90s

ANSWER KEY & EXPLANATIONS

Q 1–15 · MARK YOUR SCORE

Q1. Answer: C
Polynomials require non-negative integer exponents. Options A, B, D violate this; C has exponents 3, 1, 0 — all valid.

Q2. Answer: C
Degree is the highest power of x. Here the highest power is 4.

Q3. Answer: C
A trinomial has exactly three terms. Option C has 3 terms.

Q4. Answer: A
Set 2x + 5 = 0, so x = -5/2.

Q5. Answer: A
By Remainder Theorem, remainder = p(1) = 1 - 3 + 3 - 1 = 0.

Q6. Answer: A
p(1) = 1 - 3 + 2 = 0, so by Factor Theorem (x - 1) is a factor.

Q7. Answer: B
(x+y)^2 - (x-y)^2 = [x^2+2xy+y^2] - [x^2-2xy+y^2] = 4xy.

Q8. Answer: A
(100+2)^2 = 100^2 + 2(100)(2) + 2^2 = 10000 + 400 + 4 = 10404.

Q9. Answer: B
Need two numbers with sum -5 and product 6, namely -2 and -3. So x^2 - 5x + 6 = (x-2)(x-3).

Q10. Answer: B
Standard identity x^3 + y^3 = (x+y)(x^2 - xy + y^2). Note the MINUS sign on xy.

Q11. Answer: C
From identity x^3+y^3+z^3-3xyz = (x+y+z)(...) = 0 when x+y+z=0, so x^3+y^3+z^3 = 3xyz.

Q12. Answer: B
(x+y)^3 = x^3 + 3x^2 y + 3xy^2 + y^3 = x^3 + y^3 + 3xy(x+y).

Q13. Answer: A
By Remainder Theorem, remainder = p(-1) = -1 + 3 - 3 + 1 = 0.

Q14. Answer: C
3/x = 3x^(-1) has a negative exponent, so it is not a polynomial.

Q15. Answer: A
p(1) = 1 - 23 + 142 - 120 = 0, so (x - 1) is a factor by Factor Theorem.