



QUICK DRILL · CBSE CLASS 10

Polynomials

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

DATE _____	TOTAL MARKS 15	DURATION 20 min	MARKING +1 / 0	TARGET ≥ 12/15
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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. Degree of the polynomial $4x^3 - 7x^2 + 2x - 9$ is:

(A) 2

(C) 4

PYQ 2022 · Delhi · 1m · 20s

(B) 3

(D) -9

Q2. Which of the following is NOT a polynomial?

(A) $3x^2 + 5x + 1$ (C) $\sqrt{3}x + 1$

PYQ 2023 · Delhi · 1m · 25s

(B) $x - 7$ (D) $1/x + 2$

Q3. Number of zeroes of a quadratic polynomial is AT MOST:

(A) 1

(C) 3

PYQ 2020 · Outside Delhi · 1m · 20s

(B) 2

(D) any number

Q4. Sum of zeroes of $x^2 - 5x + 6$ is:

(A) -5

(C) 6

PYQ 2024 · Delhi · 1m · 20s

(B) 5

(D) -6

Q5. Product of zeroes of $x^2 - 5x + 6$ is:

(A) 5

(C) 6

PYQ 2024 · Delhi · 1m · 20s

(B) -5

(D) -6

Q6. Zeroes of $2x^2 + x - 3$ are:

(A) 1, -3/2

(C) 1, 3/2

PYQ 2019 · Outside Delhi · 1m · 30s

(B) -1, 3/2

(D) -1, -3/2

Q7. A quadratic polynomial with sum of zeroes 4 and product of zeroes 1 is:

(A) $x^2 - 4x + 1$ (C) $x^2 - x + 4$

PYQ 2023 · Delhi · 1m · 25s

(B) $x^2 + 4x + 1$ (D) $x^2 + x - 4$ Q8. If α, β are zeroes of $x^2 - 6x + 8$, then $\alpha^2 + \beta^2$ equals:

(A) 20

(C) 12

PYQ 2024 · Outside Delhi · 1m · 30s

(B) 16

(D) 8

Q9. If one zero of $x^2 + 5x + k$ is -2, the other zero is:

(A) -3

(C) -5

PYQ 2018 · Delhi · 1m · 25s

(B) 3

(D) 5

Q10. Sum of zeroes of cubic $2x^3 - 5x^2 - 14x + 8$ is:

(A) 5/2

(C) -14/2

PYQ 2022 · Outside Delhi · 1m · 25s

(B) -5/2

(D) 8/2

Q11. Product of zeroes of cubic $2x^3 - 5x^2 - 14x + 8$ is:

(A) -4

(C) 8

PYQ 2022 · Outside Delhi · 1m · ? 25s

(B) 4

(D) -8

Q12. If the graph of $y = p(x)$ touches the x-axis at exactly one point, the number of real zeroes is:

(A) 0

(C) 2

PYQ 2024 · Delhi · 1m · ? 20s

(B) 1

(D) infinite

Q13. Degree of the zero polynomial is:

(A) 0

(C) Undefined

PYQ 2020 · Delhi · 1m · ? 20s

(B) 1

(D) Infinite

Q14. If the zeroes of $x^2 - 5x + k$ are reciprocals of each other, then k equals

(A) 1

(C) -5

PYQ 2019 · Delhi · 1m · ? 35s

(B) 5

(D) -1

Q15. A polynomial of degree 5 has at most ____ real zeroes:

(A) 3

(C) 5

PYQ 2023 · Outside Delhi · 1m · ? 15s

(B) 4

(D) 6

ANSWER KEY & EXPLANATIONS

Q 1-15 · MARK YOUR SCORE

Q1. Answer: B

Highest power of x is 3.

Q2. Answer: D

$1/x = x^{-1}$ is a negative exponent — disqualifies polynomial. $\sqrt{3}$ in option C is just a constant coefficient, still fine.

Q3. Answer: B

Degree caps the count of real zeroes. Quadratic has degree 2 → at most 2 real zeroes.

Q4. Answer: B

Sum = $-b/a = -(-5)/1 = 5$.

Q5. Answer: C

Product = $c/a = 6/1 = 6$. Zeroes are 2 and 3; $2 \times 3 = 6$.

Q6. Answer: A

$2x^2 + x - 3 = (x - 1)(2x + 3)$; zeroes 1 and $-3/2$. Sum = $1 + (-3/2) = -1/2 = -b/a$ ✓.

Q7. Answer: A

$k[x^2 - (\text{sum})x + \text{product}] = k[x^2 - 4x + 1]$; with $k = 1 \Rightarrow x^2 - 4x + 1$.

Q8. Answer: A

$\alpha + \beta = 6$, $\alpha\beta = 8$; $\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 36 - 16 = 20$.

Q9. Answer: A

Sum = -5; other = $-5 - (-2) = -3$.

Q10. Answer: A

$\alpha + \beta + \gamma = -b/a = -(-5)/2 = 5/2$.

Q11. Answer: A

$\alpha\beta\gamma = -d/a = -8/2 = -4$.

Q12. Answer: B

Tangent contact = repeated/double root counted ONCE as a real zero.

Q13. Answer: C

The zero polynomial has no non-zero coefficient — degree is undefined (some texts: $-\infty$). NOT zero.

Q14. Answer: A

Reciprocal zeroes mean $\alpha\beta = 1$. By Vieta, $\alpha\beta = c/a = k/1 = k$. So $k = 1$.

Q15. Answer: C

Max real zeroes = degree. Always.