MATHS WITHOUT GUESSWORK · BOARD BOOSTER

Poly-nomials

LOCK THE SURE MARKS.
STRETCH FOR THE TOP.
PRACTISE THE BOARD WAY.

A board-exam practice companion for **CBSE Class 10 Mathematics**
Syllabus session 2026–27 · Standard (041)

🛡️ Secure Track | 🚀 Stretch Track | ~88 questions + 3 mini-mocks

Built around what the board actually tests

Zeros	α+β · αβ	Build
and what the graph shows	zeros ↔ coefficients	a quadratic from its zeros

Original questions and solutions. Answers kept separate. Not a substitute for the NCERT textbook or your teacher.

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Polynomials in the board paper

Know exactly how many marks are really at stake here — so you spend your effort where the paper pays.

◆ UNDERSTAND THE OFFICIAL NUMBER Polynomials sits inside **Unit II — Algebra, worth 20 marks** of the 80-mark paper. That 20 is shared across **four** chapters (Polynomials, Pair of Linear Equations, Quadratic Equations, Arithmetic Progressions). CBSE publishes weightage **per unit, not per chapter**, so treat Polynomials as a steady 3–5 mark earner inside Algebra — not a fixed figure.

Where those marks usually fall (PYQ trend — based on past papers, not official)

Form it takes	Typical marks	What it tests
1–2 MCQ / Assertion-Reason	1–2	Sum/product of zeros, degree, reading zeros off a graph
A VSA or SA	2–3	Find zeros & verify the relationship, or form a polynomial
Sometimes a case study (Section E)	4	A parabola in a real context — path, arch, profit curve

⚠ COMMON TRAP STUDYING DELETED TOPICS **Two things are OUT of the 2026–27 syllabus and will not be asked:**

- The **division algorithm for polynomials** (long division of one polynomial by another) — gone.
- The **zero–coefficient relationship for cubic polynomials** — gone. Only the *quadratic* relationship is examinable.

Reading the *number of zeros* off a cubic graph is still fine — that's the graphical meaning, not the cubic relationship.

Q4 The sum of the zeros of $2x^2 - 8x + 6$ is:

A. 8 **B.** 4

C. 3 **D.** −4

1 MARK GUIDED ★

Q5 The product of the zeros of $3x^2 + 5x - 2$ is:

A. $\frac{5}{3}$ **B.** $-\frac{2}{3}$

C. $\frac{2}{3}$ **D.** $-\frac{5}{3}$

1 MARK PART-GUIDED ★

Q6 If the zeros of $x^2 + kx + 6$ are 2 and 3, then k =

A. 5 **B.** −5

C. 6 **D.** −6

1 MARK PART-GUIDED

Q7 A quadratic polynomial whose zeros are 3 and −2 is:

A. $x^2 + x - 6$ **B.** $x^2 - x - 6$

C. $x^2 - x + 6$ **D.** $x^2 + 5x + 6$

1 MARK PART-GUIDED ★

Q8 If 1 is a zero of $x^2 - 4x + k$, then k =

A. 3 **B.** −3

C. 5 **D.** 4

1 MARK PART-GUIDED

Q9 If α, β are the zeros of $x^2 - 6x + 8$, then α + β =

A. 6 **B.** −6

C. 8 **D.** 2

1 MARK GUIDED ★

Q10 For the same polynomial $x^2 - 6x + 8$, $\alpha\beta$ =

A. 6 **B.** 8

C. −8 **D.** 2

1 MARK GUIDED

Q11 If the sum of the zeros of $kx^2 - 3x + 5$ is 1, then k =

A. 1 **B.** 3

C. −3 **D.** 5

1 MARK INDEPENDENT ★

Q12 The zeros of $x^2 - 9$ are:

A. 9 and −9 **B.** 3 and −3

C. 3 and 3 **D.** 0 and 9

1 MARK GUIDED

Q13 The zero of the linear polynomial $2x + 3$ is:

A. $\frac{3}{2}$ **B.** $-\frac{3}{2}$

C. $\frac{2}{3}$ **D.** $-\frac{2}{3}$

1 MARK GUIDED

Q14 A polynomial of degree n has at most how many zeros?

A. n − 1 **B.** n

C. n + 1 **D.** 2n

1 MARK PART-GUIDED

Q15 If the product of the zeros of $x^2 - 3x + k$ is 2, then k =

A. 2 **B.** −2

C. 3 **D.** −3

1 MARK PART-GUIDED

Very Short Answer (2-mark) set

Sixteen 2-mark questions. Each wants a quick factorisation or formula and a clear final line.

V1 Find the zeros of $x^2 - 2x - 8$ and verify the relationship between the zeros and the coefficients.

2 MARKS GUIDED ★

V2 Find a quadratic polynomial whose zeros are 5 and −3.

2 MARKS GUIDED ★

V3 Find a quadratic polynomial, the sum and product of whose zeros are −3 and 2 respectively.

2 MARKS PART-GUIDED ★

V4 If α and β are the zeros of $x^2 - 6x + 8$, write down α + β and αβ.

2 MARKS GUIDED

V5 Find the value of k if 2 is a zero of $x^2 - 5x + k$.

2 MARKS PART-GUIDED ★

V6 If α, β are the zeros of $x^2 - 7x + 10$, find $\frac{1}{\alpha} + \frac{1}{\beta}$.

2 MARKS INDEPENDENT ★

V7 Find the zeros of $6x^2 - 7x - 3$.

2 MARKS INDEPENDENT ★

V8 Find a quadratic polynomial whose zeros are $2 + \sqrt{3}$ and $2 - \sqrt{3}$.

2 MARKS INDEPENDENT

Case studies (4-mark)

➤ CHOOSE THE METHOD READ THE PARABOLA FIRST Each case gives a real situation, then sub-parts (1 + 1 + 2 marks). Decide what the polynomial models, where it meets the x-axis (the zeros), and whether a negative zero must be rejected. Then it's ordinary Polynomials.

C1 **Decorative arch.** The shape of an arch is modelled by $p(x) = x^2 - 2x - 8$.

- **(i)** What is the degree of p(x)? (1)
- **(ii)** Find the zeros of p(x) by factorisation. (1)
- **(iii)** Find the sum and product of the zeros and verify them against the coefficients. (2)

4 MARKS PART-GUIDED ★

C2 **Reading a graph.** A quadratic polynomial's graph cuts the x-axis at −3 and 1.

- **(i)** How many zeros does it have? (1)
- **(ii)** Write the zeros. (1)
- **(iii)** Form the polynomial (leading coefficient 1) and find its value at x = 2. (2)

4 MARKS INDEPENDENT ★

Answer Key

Kept at the back on purpose — so a parent needn't teach. Model questions get full step-marked solutions; drills get the key steps, the answer, and the likely slip.

Section 6 — MCQ & Assertion-Reason

Q	Ans	Why
Q1	**C**	Highest power of x is 3.
Q2	**B**	Degree 2 ⇒ at most 2 zeros (parabola meets x-axis ≤ twice).
Q3	**A**	$x^2-5x+6 = (x-2)(x-3)$ ⇒ 2, 3.
Q4	**B**	Sum = $-(-8)/2 = 4$. (Divide by a = 2.)
Q5	**B**	Product = $c/a = -2/3$.
Q6	**B**	Sum $2+3 = 5 = -k \Rightarrow k = -5$.
Q7	**B**	Sum 1, product −6 ⇒ $x^2 - x - 6$.
Q8	**A**	$p(1)=1-4+k=0 \Rightarrow k = 3$.
Q9	**A**	$\alpha+\beta = -(-6)/1 = 6$.
Q10	**B**	$\alpha\beta = 8/1 = 8$.
Q11	**B**	Sum = $3/k = 1 \Rightarrow k = 3$.
Q12	**B**	$x^2-9 = (x-3)(x+3)$ ⇒ 3, −3.
Q13	**B**	$2x+3 = 0 \Rightarrow x = -3/2$.
Q14	**B**	Degree n ⇒ at most n zeros.
Q15	**A**	Product = $k/1 = 2 \Rightarrow k = 2$.

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- **Very Short Answer.** 16 two-mark questions
- **Short Answer.** 14 three-mark questions
- **Long Answer.** 10 five-mark questions
- **Case studies.** 8 four-mark source-based cases
- **HOTS and trickiest variations.** 10 questions
- **Timed mini-mocks and Answer Key.** 3 single-chapter mini-mocks; every question has its answer, kept at the back

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