

EXAM-DAY · 90-MIN REVISION CARD

Polynomials

Print this · Fold it · Carry to the exam-hall gate · Revise once · Then walk in.

FORMULAS & KEY RESULTS

$$(x + y)^2 = x^2 + 2xy + y^2$$

$$(x - y)^2 = x^2 - 2xy + y^2$$

$$(x + y)(x - y) = x^2 - y^2$$

$$(x + a)(x + b) = x^2 + (a+b)x + ab$$

$$(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx$$

$$(x + y)^3 = x^3 + 3x^2y + 3xy^2 + y^3$$

$$(x - y)^3 = x^3 - 3x^2y + 3xy^2 - y^3$$

$$x^3 + y^3 = (x + y)(x^2 - xy + y^2)$$

$$x^3 - y^3 = (x - y)(x^2 + xy + y^2)$$

$$x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$$

$$\text{If } x + y + z = 0, \text{ then } x^3 + y^3 + z^3 = 3xyz$$

Remainder Theorem: $p(x)$ divided by $(x - a)$ leaves remainder $p(a)$

Factor Theorem: $(x - a)$ is a factor of $p(x)$ if and only if $p(a) = 0$

TOP 5 PYQ PATTERNS

1 Factorise a cubic using Factor Theorem then split middle term

3 marks · 90% of years

Test divisors of constant term first; usually plus or minus 1, 2, 3 work.

2 Apply $x^3+y^3+z^3-3xyz$ identity, especially when $x+y+z=0$

3 marks · 80% of years

Spot if sum of bases is zero — answer collapses to $3xyz$.

3 Remainder Theorem direct substitution

2 marks · 60% of years

Read divisor $(x-a)$, substitute $x=a$ into $p(x)$, arithmetic carefully.

4 Evaluate $(101)^3, (95)^2$ etc. using identities

2 marks · 50% of years

Rewrite as $(100 \text{ plus or minus } k)$ and apply cube/square identity.

5 Split middle term of a quadratic

2 marks · 50% of years

Find two numbers with sum b and product $a \cdot c$.

90-MIN REVISION FLOW

0-15 min

Re-read definitions: polynomial, degree, zero, types by term and degree. Solve 5 classification MCQs.

15-30 min

Memorise all 9 algebraic identities. Cover them and write each from memory.

30-45 min

Practise 4 Remainder Theorem problems and 4 Factor Theorem verifications.

45-65 min

Factorise 3 cubics using Factor Theorem + middle-term split. Time-box each at 6 minutes.

65-80 min

Practise 3 PYQ identity questions, especially $x^3+y^3+z^3-3xyz$ applications.

80-90 min

Attempt one mixed 6-mark mock; review marker errors and circle weak spots.

Confidence, not anxiety. You've practised this all year. Trust your steps. Don't change strategy on exam morning.
Helpline: **+91 70330 05444** · **readyforboards.com**