READY FOR BOARDS

BY READY FOR EXAM · 10TH & 12TH BOARD EXAM PREP

FOR PARENTS

CBSE CLASS 11

CH 3

APPLIED MATHEMATICS · CHAPTER 3

Mathematical Reasoning

A 1-page guide for parents · 90-second read.

EXPECTED MARKS	TIME TO MASTER	HELPLINE
7 marks	**Comfortable-with-language hrs**	**70330 05444**

WHAT THIS CHAPTER IS, IN PLAIN ENGLISH

This short chapter of your child's Class 11 Applied Mathematics book teaches the rules of clear, logical thinking — the grammar of 'true' and 'false'. Your child learns what makes a sentence a 'statement' (something that is definitely true or definitely false, unlike a question or an opinion), how to write the opposite of a statement (its 'negation'), and how to join statements with 'and' / 'or'. They study the precise meaning of everyday logic words — 'if ... then', 'only if', 'if and only if', 'all', 'some' — and the family of related sentences (converse, inverse, contrapositive) that examiners love to test. Finally they learn how to decide whether a claim is true, and how a single counter-example can disprove a sweeping 'all' statement. The mathematics is light on calculation but heavy on careful reading — it builds the disciplined reasoning that underpins law, economics, computer science and good argument generally.

5 QUESTIONS TO ASK YOUR CHILD

- What makes a sentence a 'statement' — and why is 'What is the time?' not one?
- What is the negation of 'All students passed the test'? (Hint: it is NOT 'all students failed'.)
- What is the difference between the converse and the contrapositive of 'if it rains, the ground is wet'?
- In mathematics, does 'p OR q' allow both p and q to be true at the same time?
- How can you disprove the claim 'every prime number is odd' with just one example?

WEAK-SPOT INDICATORS

- If your child says the negation of 'all are punctual' is 'all are not punctual', the quantifier-negation rule is misunderstood — the correct negation is 'some are not punctual'.
- If they confuse the converse (swap the two parts) with the contrapositive (negate AND swap), they will lose marks on the most-asked question in the chapter.
- If they think 'p only if q' is the same as 'p if q', the implication is being reversed.
- If they try to prove an 'all' statement by giving examples, they have not grasped that examples cannot prove a universal claim (but one counter-example disproves it).

WHEN TO WORRY — AND WHAT TO DO

If, after attempting one question from each area (identify-a-statement, negation, converse/contrapositive, and disproof-by-counter-example), your child gets fewer than three correct, a single focused 60-minute session usually fixes the gap. This chapter rewards careful reading and a few memorised rules far more than calculation — it is among the easiest 6 marks in the course to secure.