



MATHEMATICS · CHAPTER 1

Relations and Functions

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

EXPECTED MARKS

**A well-prepared student
scores 5-6 out of 6. Below 3 is
a flashing red light.**

TIME TO MASTER

10-12 hrs

HELPLINE

70330 05444

WHAT THIS CHAPTER IS, IN PLAIN ENGLISH

Your child is learning the formal language of mathematical relationships — how to describe a 'connection' between two sets of objects (a 'relation') and a special kind of connection where each input gives exactly one output (a 'function'). They have to classify relations as reflexive, symmetric, transitive, or equivalence — and classify functions as one-one, onto, or bijective. They also learn how to combine functions (composition) and reverse them (inverse). This is the foundation of all higher-mathematics and especially Calculus (Chapters 5-9).

5 QUESTIONS TO ASK YOUR CHILD

- Define an equivalence relation. Give one example.
- What's the difference between one-one and onto?
- When does a function have an inverse?
- If f and g are two functions, is $f \circ g$ always equal to $g \circ f$? Why or why not?
- What is the inverse of $(f \circ g)$?

WEAK-SPOT INDICATORS

- Cannot list the 3 properties (reflexive, symmetric, transitive) without prompting.
- Confuses one-one with onto (they mean different things).
- Forgets the universal quantifier ('for every a ') in reflexive proofs.
- Writes $(f \circ g)^{-1} = f^{-1} \circ g^{-1}$ instead of $g^{-1} \circ f^{-1}$.

WHEN TO WORRY — AND WHAT TO DO

If your child cannot prove an equivalence relation in 6 minutes flat, they will struggle with the entire Maths paper because this language is used throughout. The fix is daily proof practice — not just memorising definitions.

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