

# Sample MATHS Study Material

## Introduction to Algebra

Algebra is a branch of mathematics that uses symbols and letters to represent numbers and quantities in formulas.

### Basic Concepts:

1. Variables: Letters like  $x$ ,  $y$ ,  $z$  represent unknown values
2. Constants: Fixed numbers like 5, 10, 100
3. Expressions: Combinations of variables and constants

### Addition and Subtraction:

When solving equations, you can add or subtract the same number from both sides.

Example:  $x + 5 = 12$

Solution:  $x = 12 - 5 = 7$

### Multiplication and Division:

The same principle applies to multiplication and division.

Example:  $3x = 15$

Solution:  $x = 15 / 3 = 5$

### Practice Problems:

1. Solve for  $x$ :  $2x + 3 = 11$
2. Solve for  $y$ :  $5y - 7 = 18$
3. Solve for  $z$ :  $z/4 = 6$