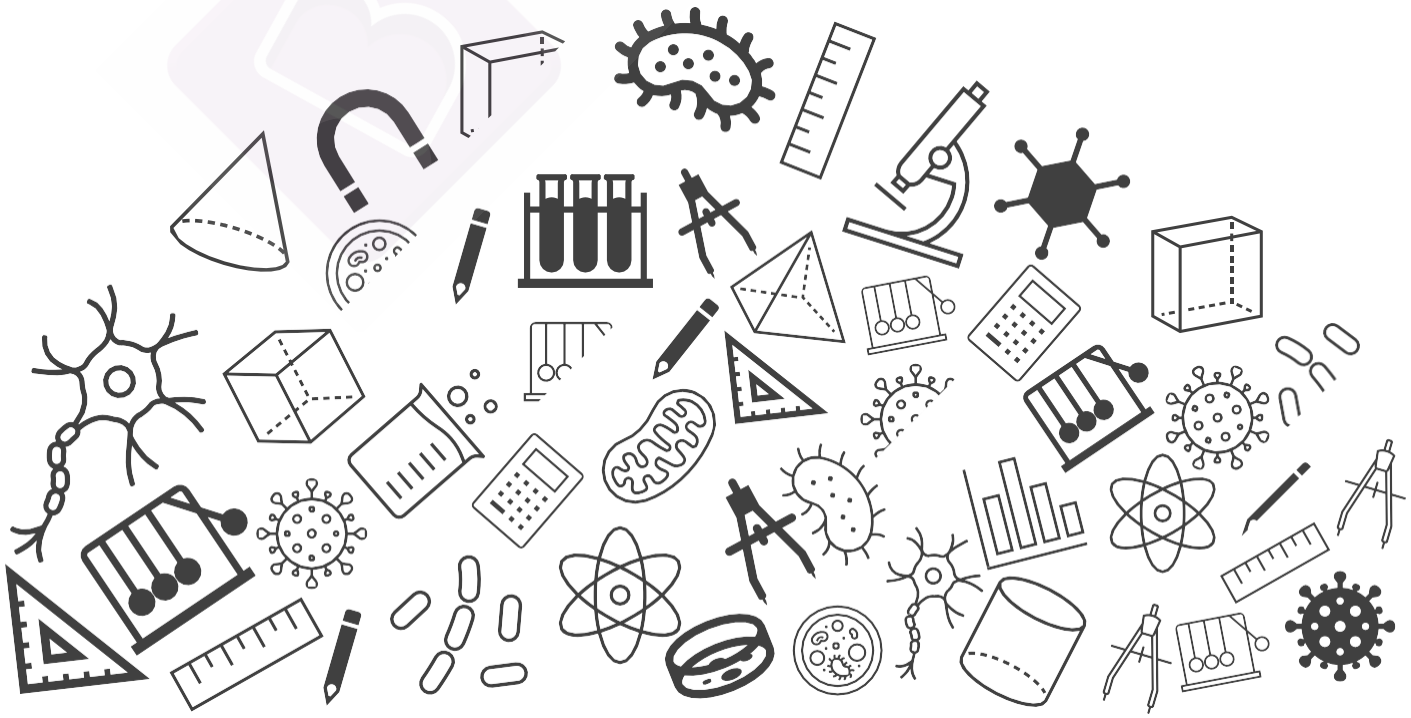
Grade 07: Maths
Chapter Notes

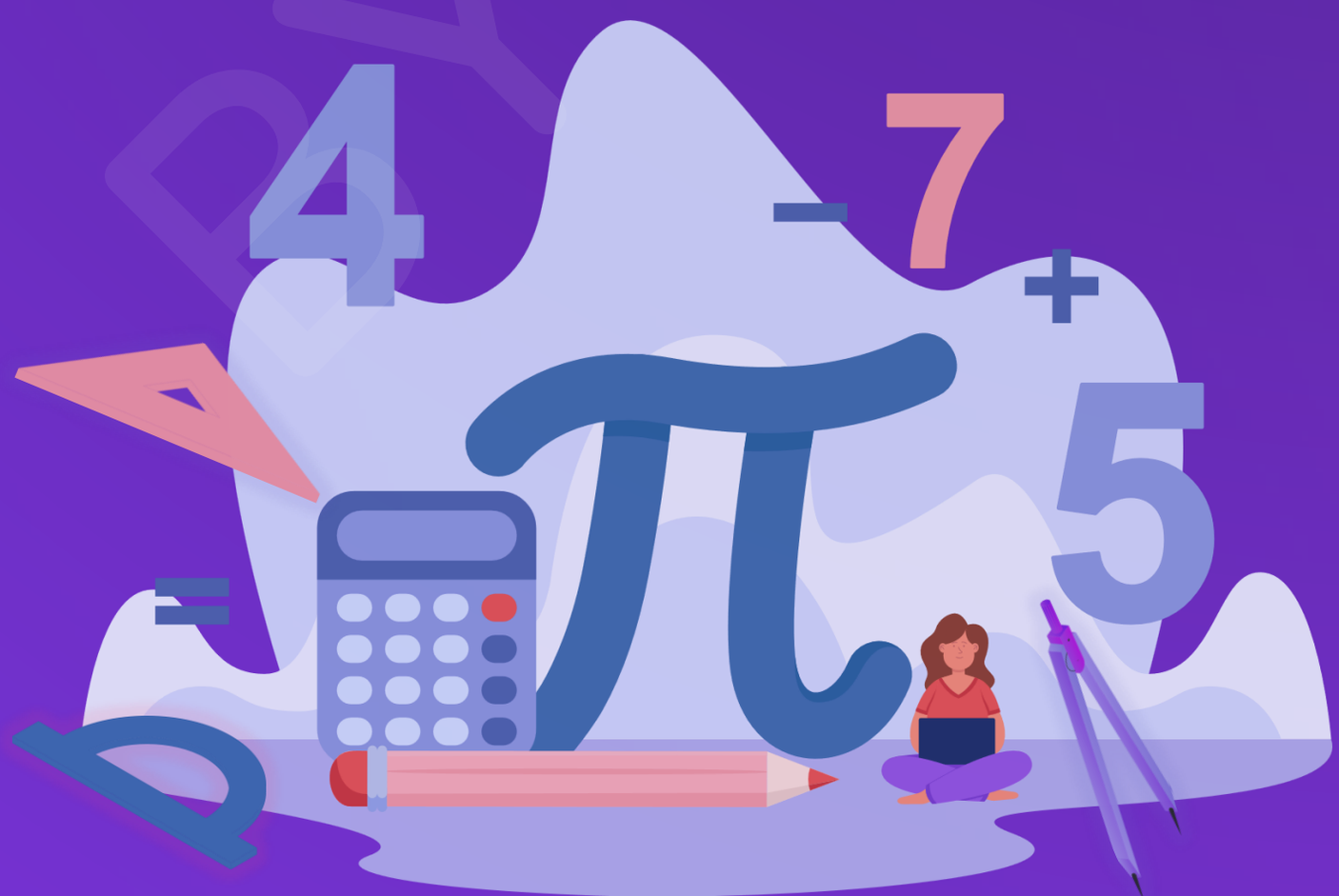


BYJU'S Classes

Chapter Notes

Simple Equations

Grade 07



Topics to be Covered

1. Introduction

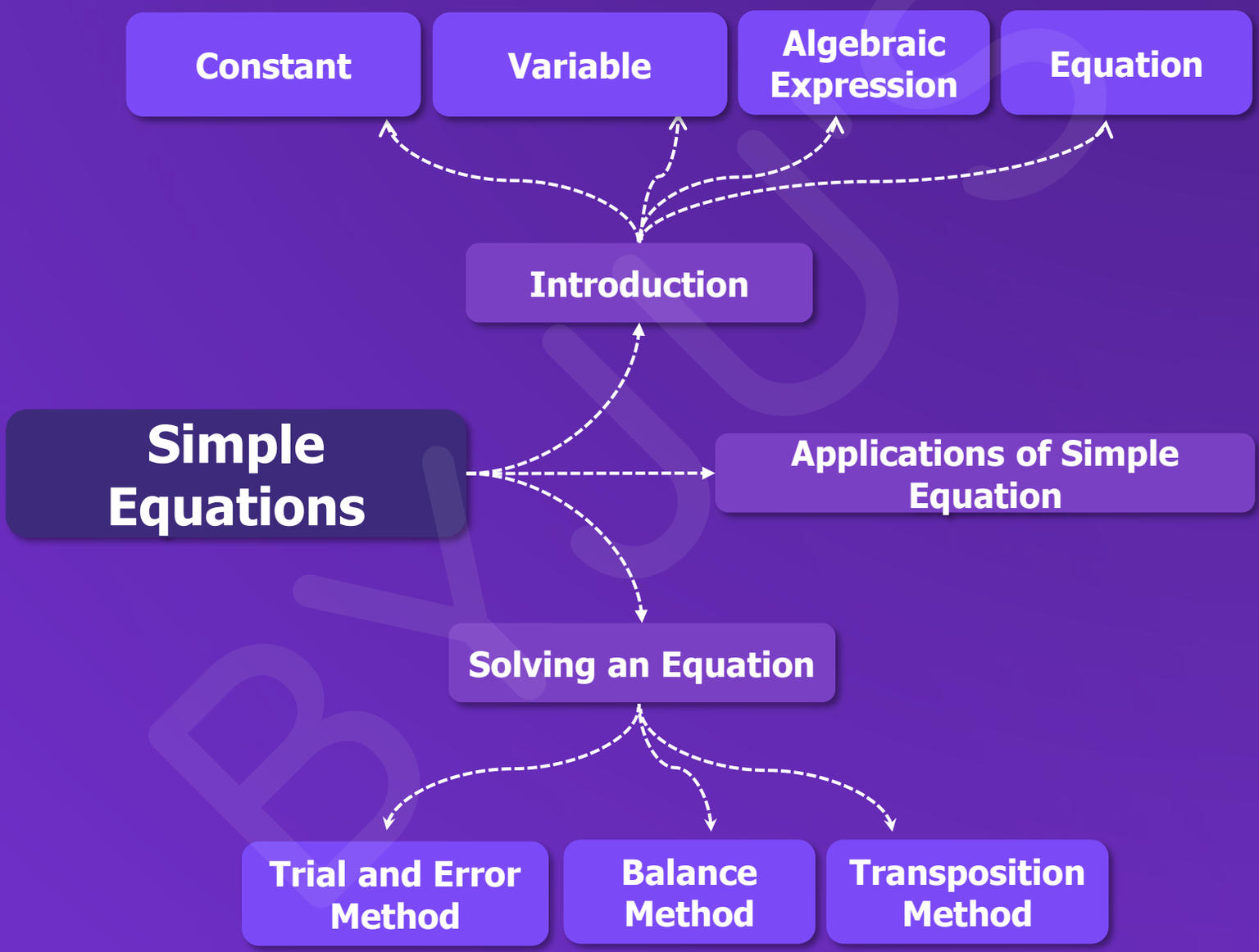
1.1 Constant
1.2 Variable
1.3 Algebraic Expression
1.4 Equation

2. Solving an Equation

3.1 Trial and Error Method
3.2 Balance Method
3.3 Transposition Method

3. Application of Simple Equation

Mind Map


Constant
Variable
Algebraic Expression
Equation
Introduction
Simple Equations
Applications of Simple Equation
Solving an Equation
Trial and Error Method
Balance Method
Transposition Method

1. Introduction

1.1. Constant

A **constant** has a **fixed numerical value,** and its value does **not change** in any situation.

For example : $5, 2775, 1098$ etc.

1.2. Variable

A **variable** **is** denoted by any **alphabets** and its value is **not fixed**.

For example : a, n, x, y, z etc.

1.3. Algebraic Expression

An **algebraic expression** is a combination of **variables** and **constants** connected with a **mathematical operator**.

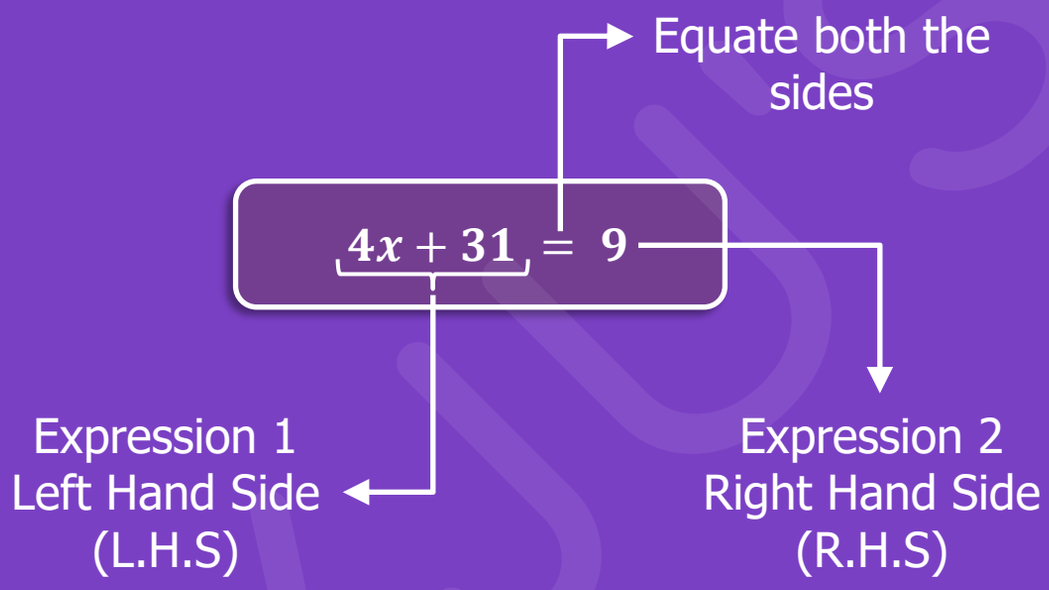
For example : $8x + 31$

1. Introduction

1.4. Equation

An **equation** is a **mathematical statement** that establishes **equality between two expressions**.

For example : $4x + 31 = 9$



2. Solving an Equation

2.1. Trial and Error Method

Substitute any random value for the variable in the equation, and check **if L.H.S = R.H.S or not.**

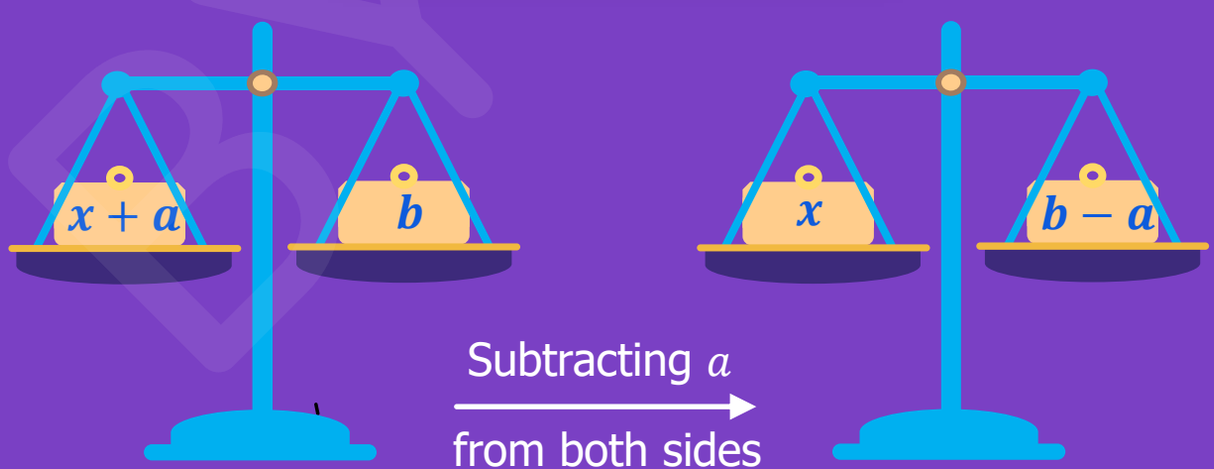
For example : $2x - 5 = 3$

Checking for some random values of x

x	$2x - 5 = 3$
2	$2(2) - 5 \neq 3$
3	$2(3) - 5 \neq 3$
4	$2(4) - 5 = 3$

Since, for $x = 4$, L.H.S = R.H.S, the solution to the given equation is $x = 4$.

2.2. Balancing Method

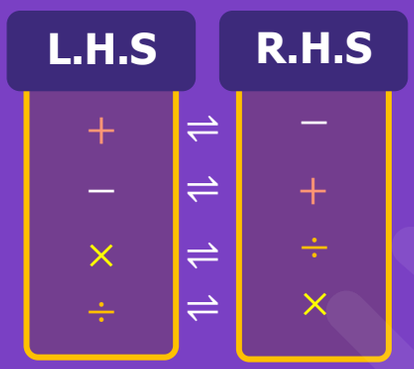


To solve equation by balancing method, perform the same mathematical operations on both sides of the equation, so that the balance is not disturbed.

2. Solving an Equation

2.3. Transposition Method

Rules of transposition of algebraic operators



Solution of an equation can be done by transposition method using the following steps:

Step 1: Transpose all the variables to one side and all the constants to the other side of the equation.

Step 2: Simplify the expression and solve for the variable.

$$2x + 3 = 9$$

$$\Rightarrow 2x = 9 - 3$$

$$\Rightarrow 2x = 6$$

$$\Rightarrow x = \frac{6}{2}$$

$$\Rightarrow x = 3$$

3. Application of Simple Equation

A simple equation can be used to solve practical Problems of our daily lives.

Make sure to follow the given steps to solve such problems.

Step 1 : Read the given statements thoroughly and note down the given information.

Step 2 : Frame the equation with the given information and solve the equation using any methods.

Example: Raju's father's age is 5 years more than 3 times Raju's age. Find Raju's age, if his father is 44 years old.

Solution: Given that,

- Raju's father's age is 5 years more than 3 times Raju's age.
- Raju's father's age is 44 years.

Step 1 : Form an equation

Let Raju's age be x years

The equation that gives Raju's age is $3x + 5 = 44$

Step 2 : Solving the equation using transposition method

- First transpose 5 to get $3x = 44 - 5 = 39$
- Dividing both sides by 3, we get $x = 13$

Hence, Raju's age is 13 years.