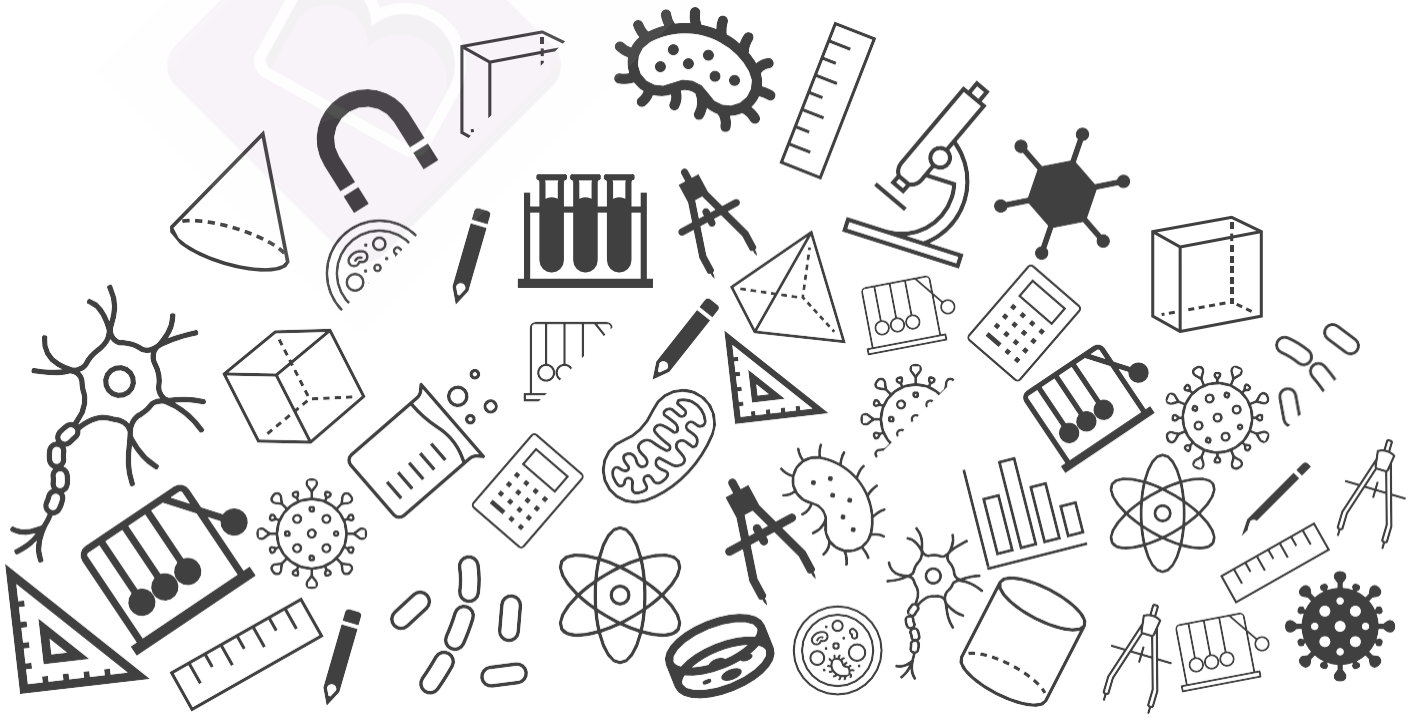
Grade 07: Maths
Chapter Notes

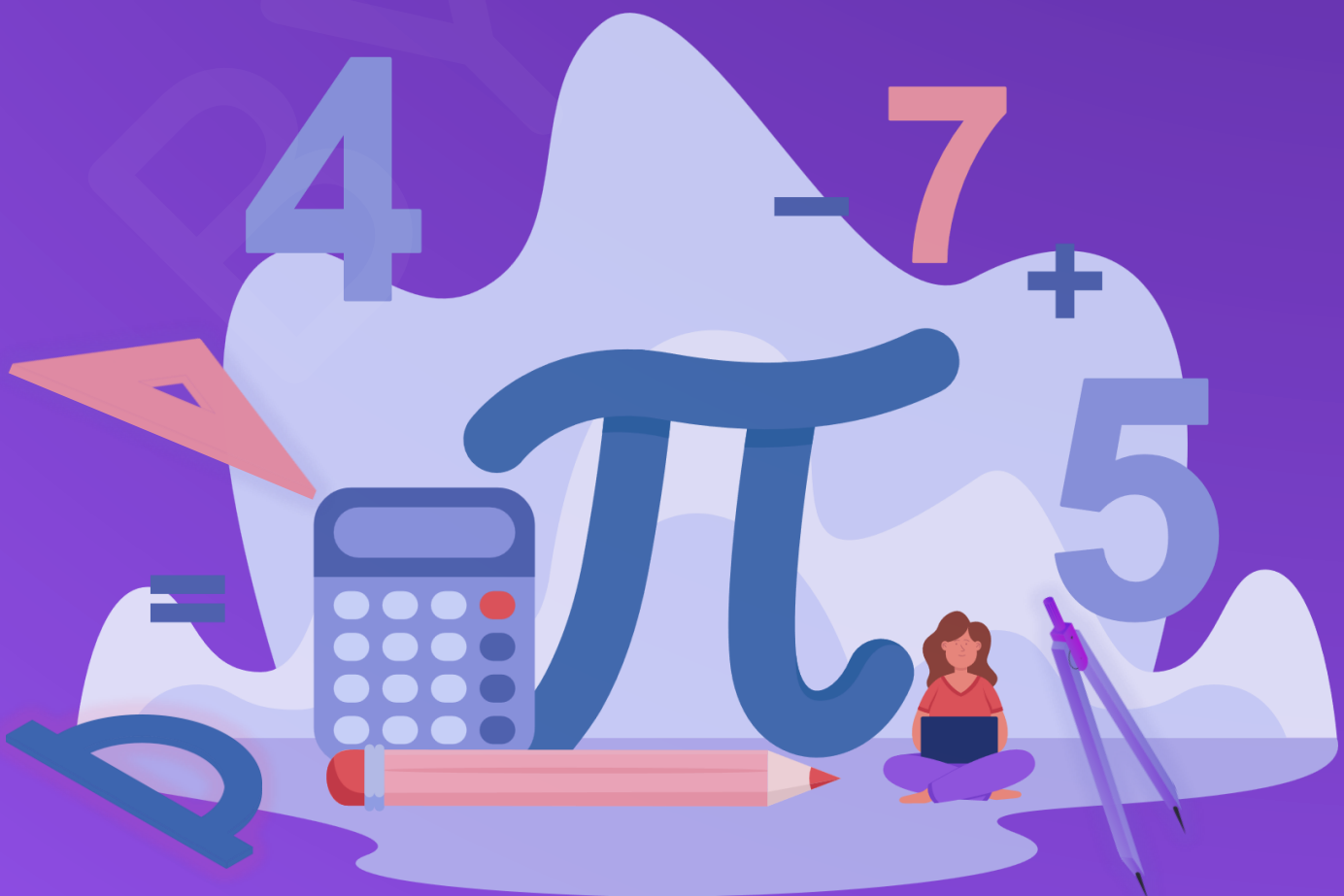


BYJU'S Classes

Chapter Notes

Comparing Quantities

Grade 07



Topics to be Covered

1. Percentage

1.1. Interconversion of percentage to fractions or decimals
1.2. Converting ratios to percentages
1.3. Converting percentages to numbers
1.4. Increase or decrease as percent

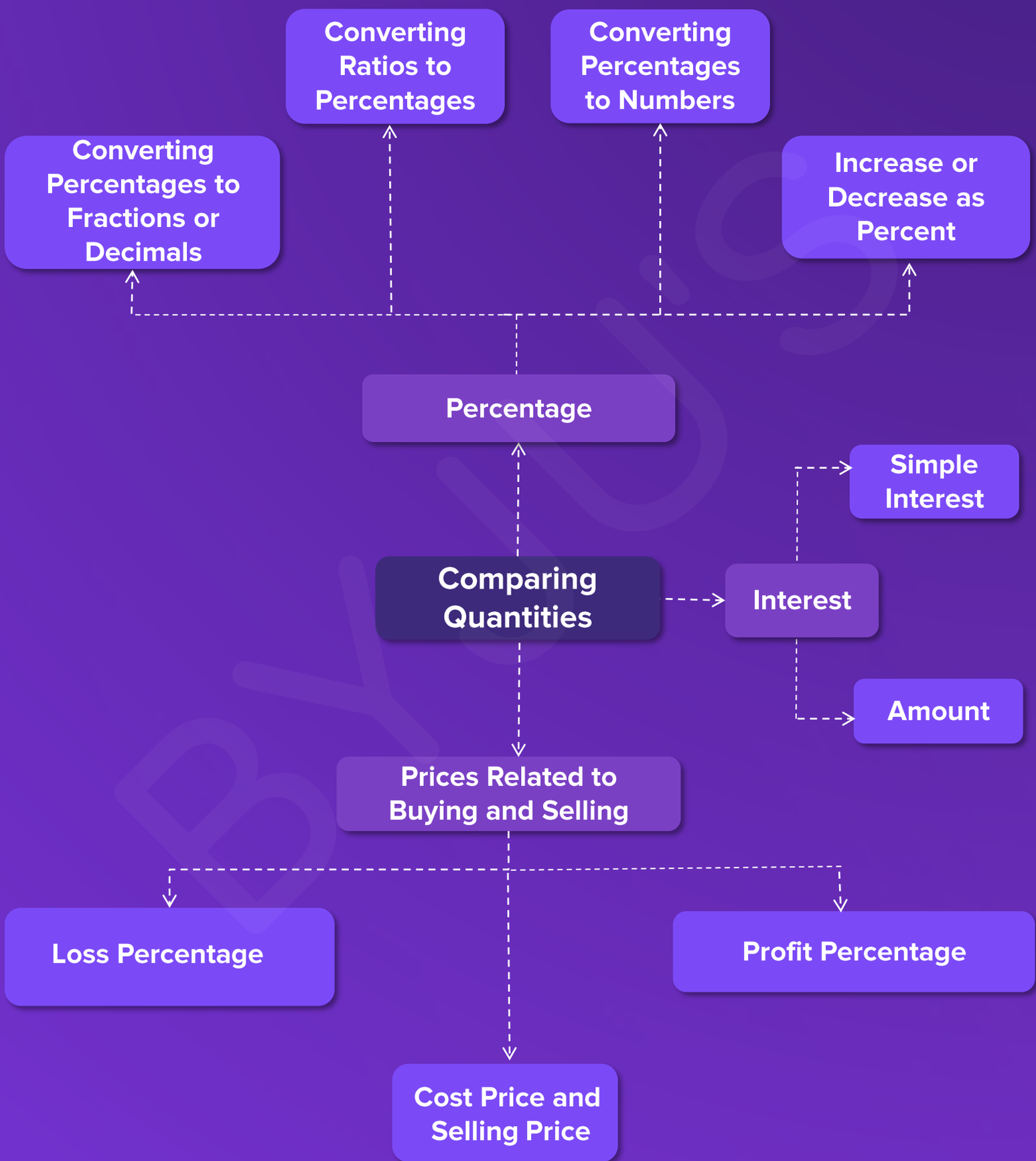
2. Prices Related to Buying and Selling

2.1. Cost price and selling price
2.2. Profit percentage
2.3. Loss percentage

3. Interest

3.1. Simple interest
3.2. Amount

Mind Map


Converting Ratios to Percentages
Converting Percentages to Numbers
Converting Percentages to Fractions or Decimals
Increase or Decrease as Percent
Percentage
Simple Interest
Comparing Quantities
Interest
Amount
Prices Related to Buying and Selling
Loss Percentage
Profit Percentage
Cost Price and Selling Price

1. Percentage

1.1. Interconversion of percentages to fractions or decimals

- Percentage is defined as a given part or amount in every hundred.

For example:

$$1\% = 1 \text{ out of } 100 = \frac{1}{100}$$

- To convert fractions or decimals into percentage we use the following formula:

$$\text{Percentage} = \text{Fraction or decimal} \times 100\%$$

Fraction/ decimal	Percentage conversion	Percentage
$\frac{1}{4}$	$\left(\frac{1}{4}\right) \times 100\%$	25%
0.75	$0.75 \times 100\%$	75%

- To convert percentages into fractions or decimals, we use the following formula:

$$\text{Fraction or decimal} = \frac{\text{Percentage}}{100}$$

Percent	Fraction	Decimal
5%	$\frac{5}{100} = \frac{1}{20}$	0.05

1. Percentage

1.2. Converting ratios to percentages

- If ratio of two quantities is $a : b$ then:

$$\text{Percentage of the first quantity} = \left(\frac{a}{a+b}\right) \times 100\%$$

$$\text{Percentage of the second quantity} = \left(\frac{b}{a+b}\right) \times 100\%$$

For example:

Ratio		Percentage conversion	Percentage
$1 : 3$	First quantity	$\frac{1}{(1+3)} \times 100\%$	25%
	Second quantity	$\frac{3}{(1+3)} \times 100\%$	75%

1.3. Converting percentages to numbers

$$x\% \text{ of } y = y \times \frac{x}{100}$$

For example:

Students		Percent	Converting to numbers
800	Boys	55%	$800 \times \frac{55}{100} = 440$
	Girls	45%	$800 \times \frac{45}{100} = 360$

1.4. Increase or decrease as percentage

- To convert the increase or decrease in a certain quantity as percentage, use the following formula:

$$\text{Percentage increase or decrease} = \frac{(\text{Amount of increase or decrease})}{\text{Original amount}} \times 100\%$$

For example:
A city population decreased from 25,000 to 24,500.
Decrease in population $= 25500 - 24500 = 500$

The percentage decrease in population

$$= \frac{\text{Decrease in population}}{\text{Original population}} \times 100\%$$

$$= \frac{550}{25500} \times 100\%$$

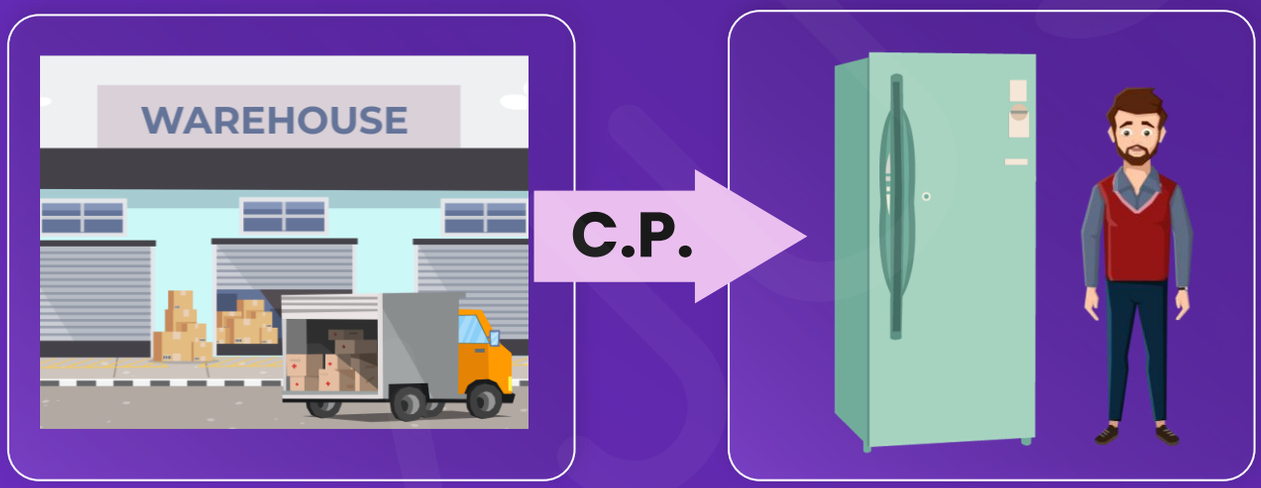
$$= 2\%$$

2. Prices Related to Buying and Selling

2.1. Cost price and selling price

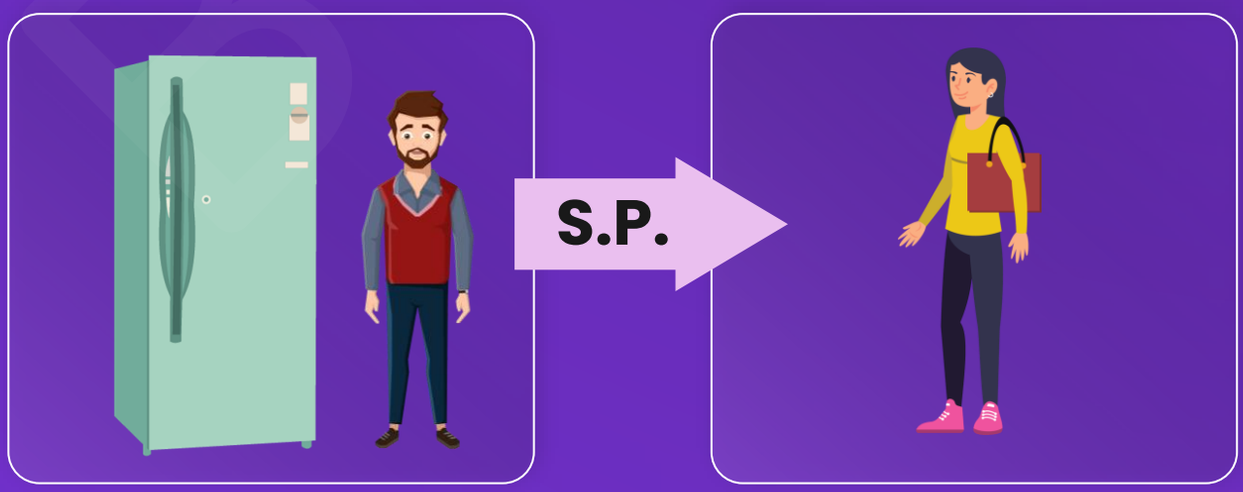
Cost price (C.P.) is the total price, a product cost to the seller.

Selling price (S.P.) is the price at which a product is sold to the customer by the seller.



Warehouse

Seller



Seller

Customer

2. Prices Related to Buying and Selling

2.2. Profit percentage

- The amount gained on cost price by selling a product.
- If the selling price (S.P.) is more than the cost price (C.P.) of the product, then it is considered as a gain or profit.
- When S.P. > C.P., we have

$$\text{Profit} = \text{S.P.} - \text{C.P.}$$

$$\text{Profit\%} = \frac{\text{Profit}}{\text{Cost price}} \times 100\%$$

2.3. Loss percentage

- The amount lost on cost price by selling a product.
- If the selling price (S.P.) is less than the cost price (C.P.) of the product, then it is considered as a loss.
- When S.P. < C.P., we have

$$\text{Loss} = \text{C.P.} - \text{S.P.}$$

$$\text{Loss\%} = \frac{\text{Loss}}{\text{Cost price}} \times 100\%$$

3. Interest

3.1. Simple interest

- Simple interest is a method to calculate the amount of interest charged on a sum borrowed or invested at a given rate and for a given time period.

$$\text{Simple interest (SI)} = \frac{P \times R \times T}{100}$$

- **Principal (P):** The money that is borrowed or invested.
- **Time (T):** It is the duration for which the principal is borrowed or invested.
- **Rate (R):** It is the rate of interest in % per annum at which the principal is borrowed or invested.

3.2. Amount

- The amount is the sum of the principal and the interest.

$$\text{Amount} = \text{Principal} + \text{Interest}$$

For example:

₹5,000 is borrowed at 15% per year as rate of interest then the amount paid after 1 year:

$$\text{Amount} = \text{Principal} + \text{Interest}$$
$$= ₹5000 + ₹\frac{15}{100} \times 5000$$
$$= ₹5750$$