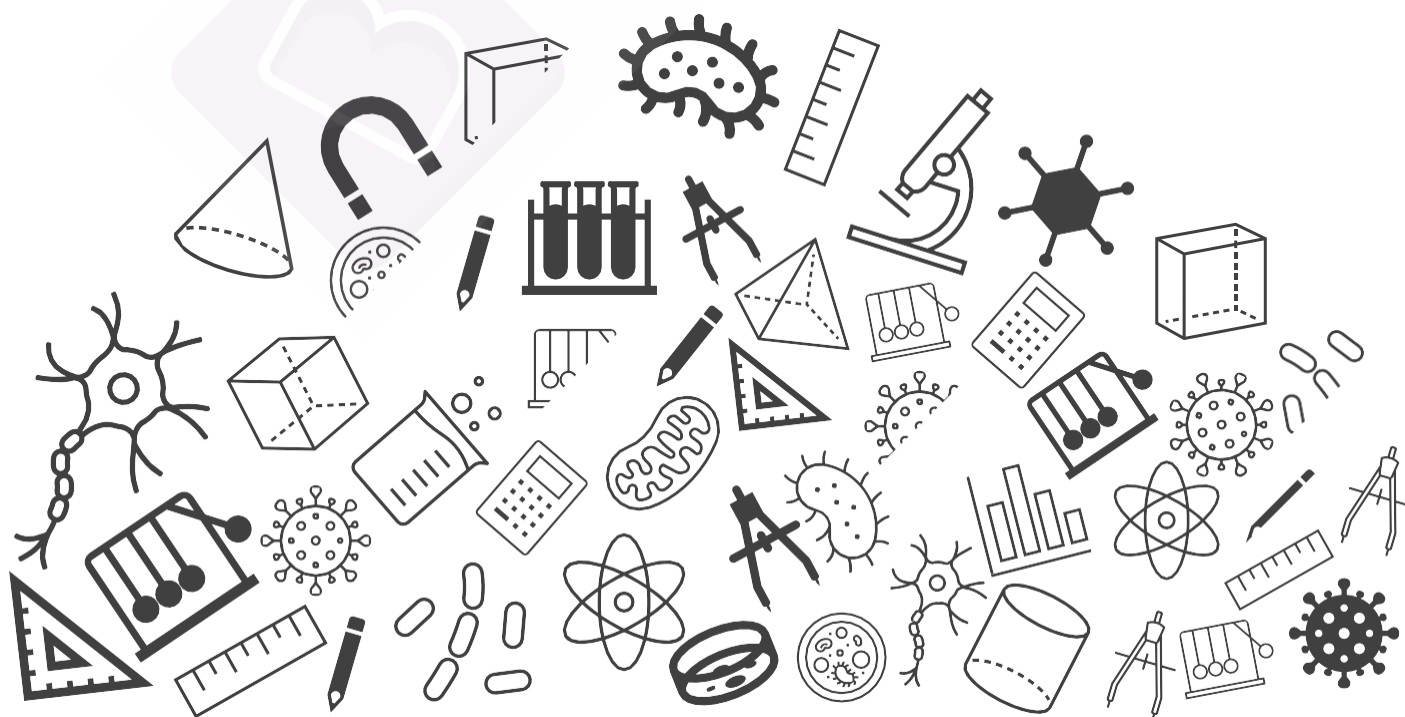




Grade 07: Maths

Chapter Notes

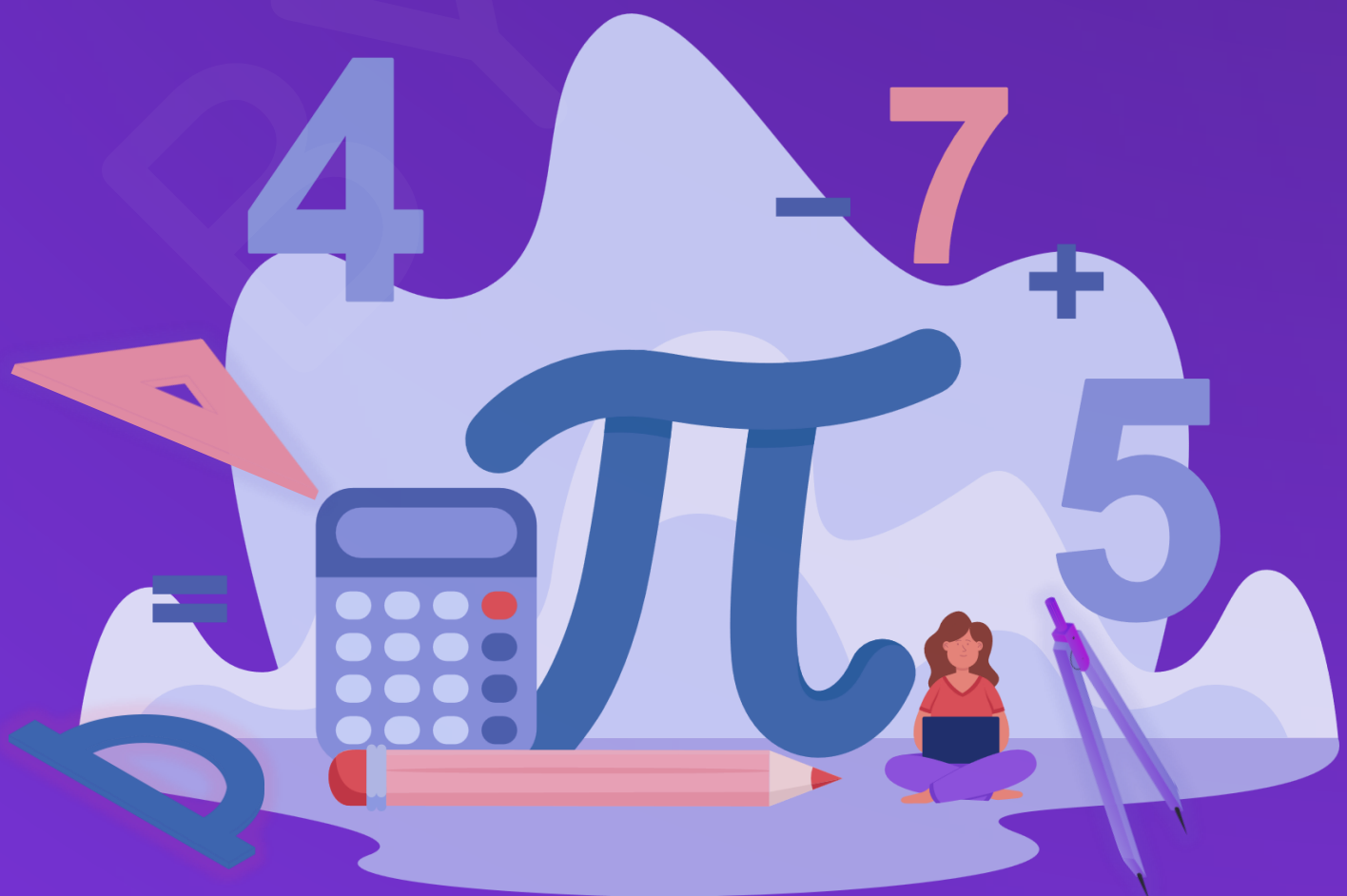


BYJU'S Classes

Chapter Notes

Fractions and Decimals

Grade 07



Topics to be Covered

1. Fractions

1.1. Multiplication of Fractions

- Multiplication of fraction by whole number
- Operator 'of'
- Multiplication of fraction by fraction

1.2. Division of Fractions

- Reciprocal
- Division of fraction by whole number
- Division of whole number by fraction
- Division of fraction by fraction

2. Decimals

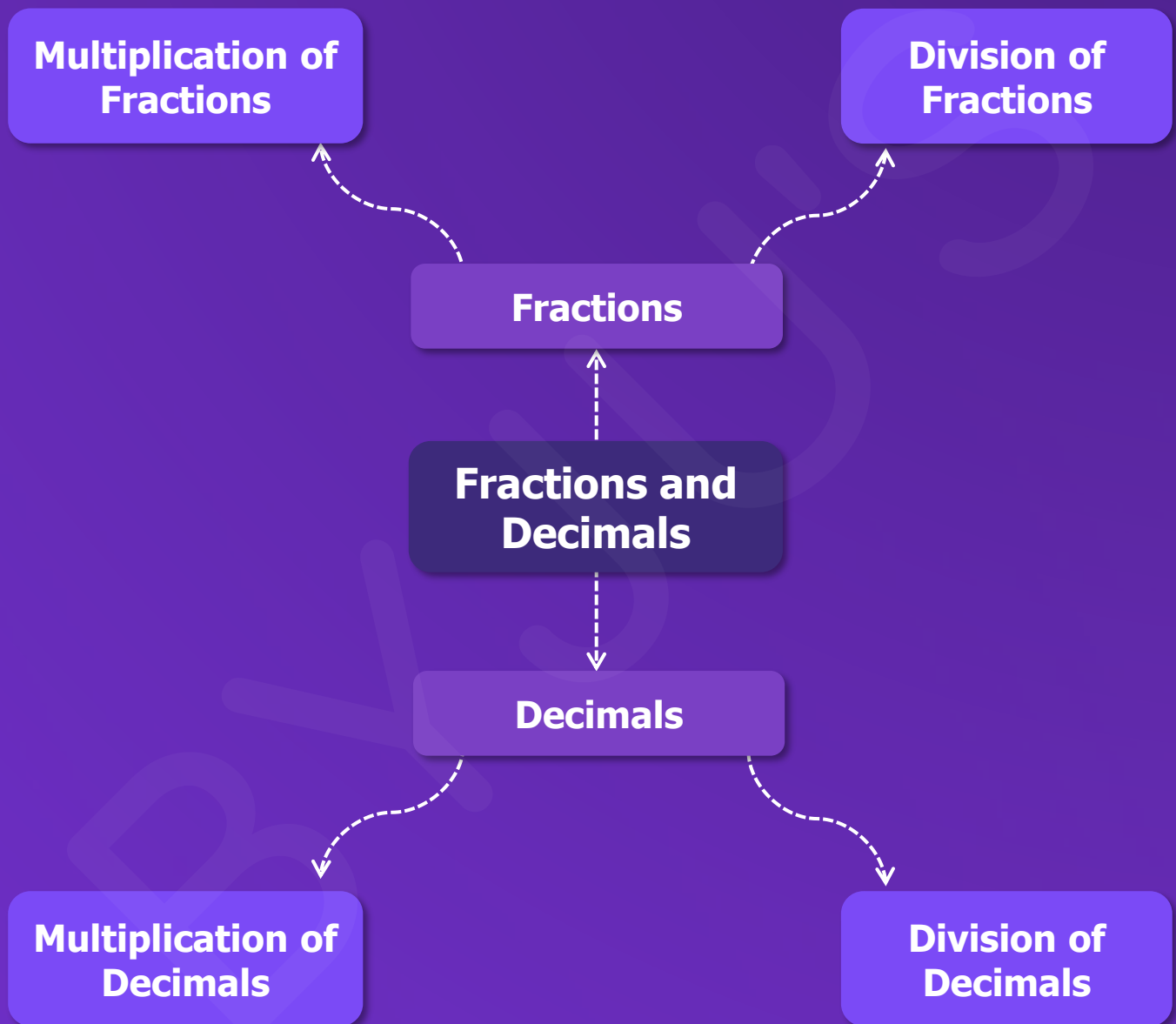
2.1. Multiplication of Decimals

- Multiplication of decimal by 10, 100, 1000
- Multiplication of decimal by decimal

2.2. Division of Decimals

- Division of decimal by 10, 100, 1000
- Division of decimal by decimal

Mind Map



1. Fractions

1.1. Multiplication of Fractions

Multiplication of Fraction by Whole Number

To multiply a fraction with the whole number, we need to multiply the numerator of the fraction with the whole number.

$$\frac{3}{7} \times 4 = \frac{3 \times 4}{7} = \frac{12}{7}$$

Operator 'of'

Operator 'of' represents multiplication.

$$\frac{2}{3} \text{ of } 5 = \frac{2}{3} \times 5 = \frac{10}{3}$$

Multiplication of Fraction by Fraction

To multiply the fractions, we need to multiply the numerator with numerator and multiply the denominator with denominator.

$$\frac{3}{7} \times \frac{1}{2} = \frac{3 \times 1}{7 \times 2} = \frac{3}{14}$$

$$\frac{3}{5} \text{ of } \frac{5}{8} = \frac{3}{5} \times \frac{5}{8} = \frac{10}{24} = \frac{5}{12}$$

1. Fractions

1.2. Division of Fractions

Reciprocal

The non-zero numbers whose product with each other is 1, are called the reciprocals of each other.

Example: Reciprocal of 2 is $\frac{1}{2}$ and vice versa.

Division of Fraction by Whole Number

Step 1: Take up the reciprocal of the divisor.

Step 2: Multiply reciprocal with the dividend.

$$\begin{aligned}\frac{3}{7} \div 7 & \quad \left(\text{Reciprocal of } 7 \text{ is } \frac{1}{7} \right) \\ &= \frac{3}{7} \times \frac{1}{7} = \frac{3}{49}\end{aligned}$$

1. Fractions

1.2. Division of Fractions

Division of Whole Number by Fraction

Step 1: Take up the reciprocal of the divisor.

Step 2: Multiply reciprocal with the dividend.

$$\begin{aligned} 7 \div \frac{3}{7} & \quad \left(\text{Reciprocal of } \frac{3}{7} \text{ is } \frac{7}{3} \right) \\ &= 7 \times \frac{7}{3} = \frac{49}{3} \end{aligned}$$

Division of Fraction by Fraction

Step 1: Take up the reciprocal of the divisor.

Step 2: Multiply reciprocal with dividend.

$$\begin{aligned} \frac{2}{3} \div \frac{8}{15} & \quad \left(\text{Reciprocal of } \frac{8}{15} \text{ is } \frac{15}{8} \right) \\ &= \frac{2}{3} \times \frac{15}{8} = \frac{5}{4} \end{aligned}$$

2. Decimals

2.1. Multiplication of Decimals

Multiplication of Decimal by Decimal

$$18.475 \times 1.6$$

Step 1: Ignore the decimal points and multiply.

$$18475 \times 16$$

=

$$295600$$

Step 2: Count the number of digits to the right of the decimal in the numbers getting multiplied and shift the decimal point to the left in the product accordingly.

$$\begin{array}{c}
 \text{3 places} \quad \quad \quad \text{1 place} \\
 \begin{array}{|c|} \hline 18.475 \\ \hline \end{array} \times \begin{array}{|c|} \hline 1.6 \\ \hline \end{array} = \begin{array}{|c|} \hline 29.5600 \\ \hline \end{array}
 \end{array}$$

Shift the decimal point by **4** places to the left

Multiplication of Decimal by 10, 100 and 1000

Count the number of zeroes in the multiplier and move the decimal point to the right as many places as the number of zeros after 1 in the multiplier.

$$\begin{array}{c}
 \text{3 zeros} \\
 \begin{array}{|c|} \hline 3.24 \times 1000 = 3240.0 \\ \hline \end{array}
 \end{array}$$

Shift the decimal point by **3** places to the right

2. Decimals

2.2. Division of Decimals

Division of Decimal by 10, 100, 1000

- Count the number of decimal places in the dividend and shift the decimal point towards the left by the same number of places in the quotient to the left to get the answer.

2 zeros

$$324 \div 100 = 3.24$$

Shift the decimal point by **2** places to the left

Division of Decimal by Decimal

$$5.76 \div 0.24$$

Step 1: Shift the decimal point by an equal number of places in both dividend and divisor to make the divisor a whole number.

$$5.76 \div 0.24$$

Step 2: Divide

$$576 \div 24 = 24$$