

HAND OUT OR CHEAT SHEET FOR MODULE 1

CLASS : 7

TOPIC : FRACTIONS

- ❖ **Fraction** is a number representing a part of a whole.
- ❖ A fraction is represented by writing the number of equal parts into which a whole is divided below a small line segment and writing the number of equal parts we have above the line segment.
- ❖ The number we write above the line segment is called the numerator and the number we write below the line segment is called denominator.
- ❖ Fraction is written like this $\frac{6}{11} = \frac{\text{Numerator}}{\text{Denominator}}$; where 6 is called the numerator and 11 is called the denominator. Above a small line segment 6 is written and below the line segment 11 is written. The line segment is also called vinculum. Which means that a whole is divided into 11 equal parts and we have 6 parts out of those 11 equal parts.
Example: $\frac{2}{5}, \frac{9}{11}, \frac{13}{10}, \dots\dots$ etc.
- ❖ A fraction is said to be a **PROPER FRACTION** if its numerator is smaller than its denominator. Any proper fraction is smaller than 1.
Example:- $\frac{1}{4}, \frac{3}{7}, \frac{2}{5}$ In all these fractions Numerator < Denominator.
- ❖ A fraction is said to be an **IMPROPER FRACTION** if its numerator is greater than its denominator. Any improper fraction is greater than 1.
Example: $\frac{125}{63}, \frac{97}{52}, \frac{84}{73}$. In all these fractions Numerator > Denominator
- ❖ **MIXED NUMBER OR MIXED FRACTION** is a combination of a whole number and a proper fraction. Any mixed number can be written as an improper fraction and any improper fraction can be written as a mixed number.
Example : $4\frac{1}{6}, 3\frac{1}{2}$,
 $4\frac{1}{6} = \frac{25}{6}$, where $4\frac{1}{6}$ is a mixed number and $\frac{25}{6}$ is an improper fraction. We get $\frac{25}{6} = \frac{(4 \times 6) + 1}{6}$
- ❖ **LIKE FRACTIONS** are those fractions with the **SAME** denominator.
Example: $\frac{20}{71}, \frac{57}{71}, \frac{193}{71}$, In all these fractions the denominator is 71

❖ **UNLIKE FRACTIONS** are those fractions with **DIFFERENT** denominators.

Example: $\frac{20}{61}, \frac{57}{45}, \frac{193}{1345}$, In all these fractions the denominators are different.

❖ **UNIT FRACTIONS** are those fractions with 1 in the numerator.

Example, $\frac{1}{63}, \frac{1}{52}, \frac{1}{73}$ In all these fractions the numerator is 1.

❖ **EQUIVALENT FRACTIONS** are those fractions which represent the same number when reduced to their lowest term.

Example: $\frac{3}{5} = \frac{6}{10} = \frac{9}{15} = \frac{30}{50} = \frac{135}{225}$

❖ **COMPARISON OF FRACTIONS**

- (i) To compare the fractions the fractions should have the same denominator.
- (ii) To compare the fractions with different denominators we should make the denominators same by finding their equivalent fractions, then we should compare.
- (iii) When the denominators are the same the fraction with greater numerator is greater fraction and the fraction with the smaller numerator is the smaller fraction.

❖

❖ **ADDITION OF A FRACTION WITH A WHOLE NUMBER**

To add a whole number with a proper fraction or a proper fraction with a whole number write sum as a mixed fraction with the whole number and the proper fraction as it is. Example: $3 + \frac{1}{2} = 3\frac{1}{2}$.

❖ **ADDITION OF FRACTIONS WITH THE SAME DENOMINATORS *****

To add the fractions of the same denominator add the numerator of all the fractions and write in the numerator and write the common denominator as the denominator of the required fraction which is the sum of all the fractions

Example: $\frac{3}{25} + \frac{6}{25} + \frac{9}{25} = \frac{3+6+9}{25} = \frac{18}{25}$

❖ **SUBTRACTION OF FRACTIONS WITH THE SAME DENOMINATORS *****

To subtract a fraction from another of the same denominator subtract the numerator of the second fraction from the first fraction and write the difference

in the numerator and write the common denominator as the denominator of the required fraction which is the difference of the given fractions

Example:
$$\frac{18}{25} - \frac{9}{25} - \frac{3}{25} = \frac{18-9-3}{25} = \frac{6}{25}$$

❖ **ADDITION AND SUBTRACTION OF FRACTIONS WITH DIFFERENT DENOMINATORS ******

To add or subtract the fractions of different denominators first make the denominators same by finding the equivalent fractions of the given fractions with the same denominator and proceed as in ***.

❖ **ADDITION AND SUBTRACTION OF MIXED FRACTIONS**

First change the mixed fractions into improper fractions .

If the denominators are the same you proceed as in ***.

If the denominators are different then you proceed as in ****

 ~~~~~