

Topic Synopsis

Proper Fractions

1. Proper Fractions: A proper fraction is a number which represents part of a whole. In this type of fraction the denominator shows the number of parts to which the whole is divided and the numerator shows the number of parts we have taken out. Therefore, in a proper fraction the numerator is always less than the denominator.

For example: $\frac{2}{5}$, $\frac{3}{4}$, $\frac{7}{11}$

2. Improper Fractions: The fractions, where the numerator is greater than the denominator are called improper fractions.

For example: $\frac{7}{4}$, $\frac{13}{7}$

3. Mixed Fractions: An improper fraction can be written as a combination of a whole and a part, and such fractions are then called mixed fractions. All improper fractions can be written in the form of mixed fractions and every mixed fraction can be written as an improper fraction.

• An improper fraction can be written as mixed fraction by dividing numerator by denominator to obtain the quotient and the remainder. Then mixed fraction will be written as

Quotient $\frac{\text{Remainder}}{\text{Divisor}}$

For example: $\frac{19}{3}$ can be expressed as mixed fraction as follows:

$$\begin{array}{r} 6 \\ 3 \overline{) 19} \\ \underline{-18} \\ 1 \end{array}$$

Thus, $\frac{19}{3} = 6 \frac{1}{3}$

Alternatively we can write as follows:

$$\frac{19}{3} = \frac{18 + 1}{3} = \frac{18}{3} + \frac{1}{3} = 6 + \frac{1}{3} = 6 \frac{1}{3}$$

• Mixed fraction can be written in improper fraction as:

$$\frac{(\text{Whole} \times \text{Denominator}) + \text{Numerator}}{\text{Denominator}}$$

For example: $3 \frac{1}{5} = \frac{3 \times 5 + 1}{5} = \frac{16}{5}$

