Comparing Fractions

☞ Case 1: Fractions with like denominators

The fraction with greater numerator is greater.

Examples: $\frac{4}{7} > \frac{2}{7}$; $\frac{9}{13} > \frac{8}{13}$ etc.

Three or more like fractions can be arranged in ascending or descending order by arranging their numerators in ascending or descending order. For Example, the fractions $\frac{8}{11}, \frac{7}{11}, \frac{10}{11}, \frac{3}{11}$ can be arranged in the ascending order as $\frac{3}{11} < \frac{7}{11} < \frac{8}{11} < \frac{10}{11}$

☞ Case 2: Fractions with like numerators

The fraction with smaller denominators is greater.

Examples: $\frac{4}{7} > \frac{4}{10}$; $\frac{8}{13} > \frac{8}{17}$ etc.

☞ Comparing Unlike Fractions

Rule: To compare two unlike fractions, first we convert them into equivalent fractions by finding LCM of their denominators. Then the fractions having the larger numerator is larger than the one having smaller numerator.

☞ Let us understand with the help of an example:

Example: Compare $\frac{2}{8}$ and $\frac{3}{5}$.

Solution: The LCM of denominators 8 and 5 is 40.

Therefore, we convert $\frac{2}{8}$ and $\frac{3}{5}$ into like fractions each having denominator 40.

$$\frac{2}{8} = \frac{2\times5}{8\times5} = \frac{10}{40} \text{ and } \frac{3}{5} = \frac{3\times8}{5\times8} = \frac{24}{40}$$

Now, $\frac{10}{40}$ and $\frac{24}{40}$ are like fractions. Clearly, 10 < 24. **Hence,** $\mathbf{\frac{10}{40} < \frac{24}{40}}$**, i.e.,** $\mathbf{\frac{2}{8} < \frac{3}{5}}$