CLASS NOTES

Multiplication of a fraction by a fraction

Multiplication of a fraction by a fraction is basically the product of numerators divided by the product of denominators.

$$\text{Multiplication of a fraction by a fraction} = \frac{\text{product of numerators}}{\text{product of denominators}}$$

Example: $\frac{2}{5} \times \frac{3}{7} = \frac{2 \times 3}{5 \times 7} = \frac{6}{35}$

(Multiplication of mixed fractions – First convert mixed fractions to improper fractions and then multiply.)

Example: $4\frac{2}{3} \times 1\frac{1}{7} = \frac{14}{3} \times \frac{8}{7} = \frac{14 \times 8}{3 \times 7} = \frac{112}{21}$

Value of the products

When two proper fractions are multiplied, the product is less than each of the two fractions.

The value of the product of two proper fractions is smaller than each of the two fractions.

Example: $\frac{2}{3} \times \frac{4}{5} = \frac{8}{15}$

Here, $\frac{8}{15} < \frac{2}{3}$ and $\frac{8}{15} < \frac{4}{5}$

i.e., the product is less than each of the two fractions.

When two improper fractions are multiplied, the product is greater than each of the two fractions.

The value of the product of two improper fractions is more than each of the two fractions.

Example: $\frac{3}{2} \times \frac{8}{7} = \frac{24}{14}$

Here, $\frac{24}{14} > \frac{3}{2}$ and $\frac{24}{14} > \frac{8}{7}$

i.e., the product is greater than each of the two fractions.