

## Addition of Fractions

### Understanding the Topic

- Addition of fractions means adding parts of the whole
- Fractions can be added only when they have the same denominator (like fractions)
- If fractions have different denominators (unlike fractions), we make them like by finding the LCM
- After making the denominators same, add the numerators and keep the denominator same
- If the result is an improper fraction, we can convert it into a mixed fraction

### Examples with Solutions

#### Example:

**Add  $\frac{2}{5}$  and  $\frac{1}{5}$**

Denominators are same

Add numerators:  $2 + 1 = 3$

**Answer:**  $\frac{3}{5}$

#### Example:

**Add  $\frac{1}{3}$  and  $\frac{2}{3}$**

Like fractions

$$1 + 2 = 3$$

$$\frac{3}{3} = 1$$

**Answer:** 1

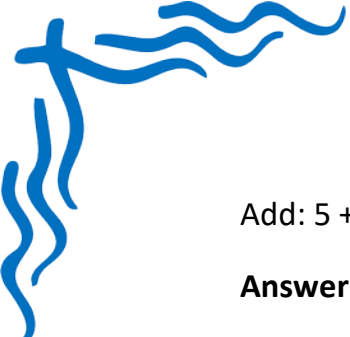
#### Example:

**Add  $\frac{1}{4}$  and  $\frac{2}{5}$**

Unlike fractions

LCM of 4 and 5 = 20

$$\text{Convert: } \frac{1}{4} = \frac{5}{20}, \frac{2}{5} = \frac{8}{20}$$



Add:  $5 + 8 = 13$

**Answer:**  $\frac{13}{20}$

**Example:**

**Add  $\frac{3}{8}$  and  $\frac{5}{8}$**

Like fractions

$$3 + 5 = 8$$

$$\frac{8}{8} = 1$$

**Answer:** 1

**Example:**

**Add  $\frac{1}{2}$  and  $\frac{3}{4}$**

Unlike fractions

LCM of 2 and 4 = 4

$$\text{Convert: } \frac{1}{2} = \frac{2}{4}$$

$$\text{Add: } 2 + 3 = 5$$

**Answer:**  $\frac{5}{4} = 1\frac{1}{4}$  (mixed fraction)

### Summary Points

- Add fractions with the same denominator directly
- For different denominators, convert them to like fractions using LCM
- Add the numerators and keep the same denominator
- Simplify or convert the answer into a mixed number if needed
- Practice helps in handling both like and unlike fractions with ease