Subtraction of Unlike Fractions

Understanding the Topic

- Unlike fractions have different denominators.
- To subtract unlike fractions, we first make the denominators same.
- We do this by finding the LCM (Least Common Multiple) of the denominators.
- Then we convert the fractions into like fractions.
- After making them like, we subtract the numerators and keep the denominator same.
- Simplify the result if needed.

Examples with Solutions

Example:

Subtract $\frac{3}{4}$ *from* $\frac{5}{6}$

LCM of 4 and 6 = 12

Convert: $\frac{3}{4} = \frac{9}{12}, \frac{5}{6} = \frac{10}{12}$

Subtract: $\frac{10}{12} - \frac{9}{12} = \frac{1}{12}$

Answer: $\frac{1}{12}$

Example:

Subtract $\frac{1}{2}$ *from* $\frac{3}{5}$

LCM of 2 and 5 = 10

Convert: $\frac{1}{2} = \frac{5}{10}, \frac{3}{5} = \frac{6}{10}$

Subtract: $\frac{6}{10} - \frac{5}{10} = \frac{1}{10}$

Answer: $\frac{1}{10}$

Example:

Subtract $\frac{2}{3}$ *from* $\frac{7}{8}$

LCM of 3 and $8 = 24$

Convert: $\frac{2}{3} = \frac{16}{24}, \frac{7}{8} = \frac{21}{24}$

Subtract: $\frac{21}{24} - \frac{16}{24} = \frac{5}{24}$

Answer: $\frac{5}{24}$

Example:

Subtract $\frac{1}{5}$ *from* $\frac{2}{3}$

LCM of 5 and $3 = 15$

Convert: $\frac{1}{5} = \frac{3}{15}, \frac{2}{3} = \frac{10}{15}$

Subtract: $\frac{10}{15} - \frac{3}{15} = \frac{7}{15}$

Answer: $\frac{7}{15}$

Example:

Subtract $\frac{5}{6}$ from $\frac{7}{10}$

LCM of 6 and $10 = 30$

Convert: $\frac{5}{6} = \frac{25}{30}, \frac{7}{10} = \frac{21}{30}$

Subtract: $\frac{25}{30} - \frac{21}{30} = \frac{4}{30} = \frac{2}{15}$ (after simplification)

Answer: $\frac{2}{15}$

Summary Points

- Unlike fractions have different denominators and cannot be subtracted directly.
- Find the LCM of the denominators to make them like fractions.
- Convert both fractions with the same denominator.
- Subtract numerators and write the result over the common denominator.
- Simplify the final answer if possible.