

Jender Heart High School; Sec-33 B, Chd.

Class - VI

Date - 29.07.24

Subject - Mathematics

Teacher - Ms. Sushma

Ch-4

Exercise - 4C

Q1. Point out the proper and improper fractions from the following:

(i) $\frac{7}{9}$ → Proper fraction

(ii) $\frac{21}{8}$ → Improper fraction

(iii) $\frac{10}{18}$ → Improper fraction

(iv) $\frac{100}{101}$ → Proper fraction

Q2:- Convert each of the following mixed fractions into an improper fraction:-

$$(i) \quad 8 \frac{3}{4} = \frac{8 \times 4 + 3}{4} = \frac{32 + 3}{4} = \frac{35}{4}$$

$$(ii) \quad 4 \frac{7}{16} = \frac{4 \times 16 + 7}{16} = \frac{64 + 7}{16} = \frac{71}{16}$$

Q3. Convert each of the following improper fractions into a mixed fraction:

$$(i) \quad \frac{31}{5} = 6\frac{1}{5}$$

$$\begin{array}{r} 6 \\ 5 \overline{) 31} \\ \underline{-30} \\ 1 \end{array}$$

$$(ii) \quad \frac{107}{3} = 35\frac{2}{3}$$

$$\begin{array}{r} 35 \\ 3 \overline{) 107} \\ \underline{9} \\ 17 \\ \underline{-15} \\ 2 \end{array}$$

Q4. Convert each of the following sets of unlike fractions into that of like fractions:-

$$(i) \quad \frac{4}{5}, \frac{7}{10}, \frac{11}{15}, \frac{13}{20}$$

$$\text{The LCM of } (5, 10, 15, 20) = 2 \times 2 \times 3 \times 5 = 60$$

$$\begin{array}{l|l} 2 & 5, 10, 15, 20 \\ 2 & 5, 5, 15, 10 \\ 3 & 5, 5, 15, 5 \\ 5 & 5, 5, 5, 5 \\ & 1, 1, 1, 1 \end{array}$$

$$\frac{4}{5} \times \frac{12}{12}, \frac{7}{10} \times \frac{6}{6}, \frac{11}{15} \times \frac{4}{4}, \frac{13}{20} \times \frac{3}{3}$$

$$\frac{48}{60}, \frac{42}{60}, \frac{44}{60}, \frac{39}{60}$$

$$(ii) \quad \frac{2}{7}, \frac{5}{8}, \frac{11}{14}, \frac{9}{16}, \frac{3}{4}$$

$$\text{LCM}(7, 8, 14, 16, 4) = 2 \times 2 \times 2 \times 2 \times 7 = 112$$

$$\begin{array}{l|l} 2 & 7, 8, 14, 16, 4 \\ 2 & 7, 4, 7, 8, 2 \\ 2 & 7, 2, 7, 4, 1 \\ 2 & 7, 1, 7, 2, 1 \\ 7 & 7, 1, 7, 1, 1 \\ & 1, 1, 1, 1, 1 \end{array}$$

$$\frac{2}{7} \times \frac{16}{16}, \frac{5}{8} \times \frac{14}{14}, \frac{11}{14} \times \frac{8}{8}, \frac{9}{16} \times \frac{7}{7}, \frac{3}{4} \times \frac{28}{28}$$

$$\frac{32}{112}, \frac{70}{112}, \frac{88}{112}, \frac{63}{112}, \frac{84}{112}$$

$$\frac{32}{112}, \frac{70}{112}, \frac{88}{112}, \frac{63}{112}, \frac{84}{112}$$

Q4 Arrange the following fractions in ascending order:

(i) $\frac{3}{11}, \frac{9}{11}, \frac{4}{11}, \frac{5}{11}, \frac{1}{11}$

Soln:- $\frac{1}{11} < \frac{3}{11} < \frac{4}{11} < \frac{5}{11} < \frac{9}{11}$

(ii) $\frac{2}{13}, \frac{2}{9}, \frac{2}{15}, \frac{2}{7}, \frac{2}{5}$

Soln:- $\frac{2}{15} < \frac{2}{13} < \frac{2}{9} < \frac{2}{7} < \frac{2}{5}$

Ex 4D

Q1 Find the sum:

(i) $\frac{2}{7} + \frac{3}{7} = \frac{2+3}{7} = \frac{5}{7}$ Ans.

(ii) $1\frac{5}{6} + \frac{1}{6} = \frac{11}{6} + \frac{1}{6} = \frac{11+1}{6} = \frac{12}{6} = 2$ Ans.

(iii) $\frac{5}{14} + \frac{3}{14} + \frac{1}{14} = \frac{5+3+1}{14} = \frac{9}{14}$

(iv) $1\frac{7}{8} + \frac{3}{8} + 1\frac{5}{8} = \frac{15}{8} + \frac{3}{8} + \frac{13}{8} = \frac{15+3+13}{8} = \frac{31}{8} = 3\frac{7}{8}$

(v) $\frac{4}{9} + \frac{5}{6}$

LCM(9, 6) = $2 \times 3 \times 3 = 18$

$\frac{4}{9} \times \frac{2}{2} + \frac{5}{6} \times \frac{3}{3} = \frac{8}{18} + \frac{15}{18}$

$= \frac{23}{18} = 1\frac{5}{18}$

$$\begin{array}{r|l} 2 & 9, 6 \\ \hline 3 & 9, 3 \\ \hline 3 & 3, 3 \\ \hline & 1, 1 \end{array}$$

$$\text{vi)} \quad \frac{7}{12} + \frac{13}{18}$$

$$\text{LCM of } (12, 18) = 36$$

$$\frac{7}{12} \times \frac{3}{3} + \frac{13}{18} \times \frac{2}{2} = \frac{21}{36} + \frac{26}{36} = \frac{47}{36} = 1 \frac{11}{36} \text{ Ans}$$

$$\text{vii)} \quad \frac{5}{6} + \frac{8}{9} + \frac{11}{18} + \frac{13}{27}$$

$$\text{LCM } (6, 9, 18, 27) = 54$$

$$\frac{5}{6} \times \frac{9}{9} + \frac{8}{9} \times \frac{6}{6} + \frac{11}{18} \times \frac{3}{3} + \frac{13}{27} \times \frac{2}{2}$$

$$\frac{45}{54} + \frac{48}{54} + \frac{33}{54} + \frac{26}{54} = \frac{45+48+33+26}{54} = \frac{152}{54}$$

$$= \frac{76}{27} = 2 \frac{22}{27}$$

Ques Find the difference:

$$\text{(i)} \quad \frac{9}{11} - \frac{5}{11} = \frac{9-5}{11} = \frac{4}{11}$$

$$\text{(ii)} \quad 1\frac{7}{8} - \frac{5}{12} = \frac{15}{8} - \frac{5}{12}$$

$$\text{LCM } (8, 12) = 24$$

$$\frac{15}{8} \times \frac{3}{3} - \frac{5}{12} \times \frac{2}{2} = \frac{45}{24} - \frac{10}{24} = \frac{35}{24} = 1\frac{11}{24}$$

$$\text{(iii)} \quad 12 - 6\frac{5}{8} = \frac{12}{1} - \frac{53}{8}$$

$$\text{LCM } (1, 8) = 8$$

$$\frac{12}{1} \times \frac{8}{8} - \frac{53}{8} = \frac{96}{8} - \frac{53}{8} = \frac{96-53}{8} = \frac{43}{8} = 5\frac{3}{8}$$

Simplify:-

Q. $\frac{4}{9} - \frac{5}{12} + \frac{1}{4}$

The LCM (9, 12, 4) = 36

$$\begin{aligned}\frac{4}{9} \times \frac{4}{4} - \frac{5}{12} \times \frac{3}{3} + \frac{1}{4} \times \frac{9}{9} &= \frac{16}{36} - \frac{15}{36} + \frac{9}{36} \\ &= \frac{16-15+9}{36} = \frac{25-15}{36} = \frac{10}{36} = \frac{5}{18} \text{ Ans.}\end{aligned}$$

Q. Subtract the sum of $9\frac{3}{4}$ and $3\frac{5}{6}$ from $15\frac{7}{12}$.

Soln:- First add the numbers

$$9\frac{3}{4} + 3\frac{5}{6} = \frac{39}{4} + \frac{23}{6} = \frac{117}{12} + \frac{46}{12} = \frac{163}{12}$$

Now, subtract the number from a given no:-

$$15\frac{7}{12} - \frac{163}{12} = \frac{187}{12} - \frac{163}{12} = \frac{24}{12} = 2 \text{ Ans.}$$

Q. Subtract the sum of $2\frac{5}{12}$ and $3\frac{3}{4}$ from the sum of $7\frac{1}{3}$ and $5\frac{1}{6}$.

Soln:- The sum of $2\frac{5}{12}$ and $3\frac{3}{4}$ is

$$2\frac{5}{12} + 3\frac{3}{4} = \frac{29}{12} + \frac{15}{4} = \frac{29}{12} + \frac{45}{12} = \frac{74}{12} \text{ --- (1)}$$

The sum of $7\frac{1}{3}$ and $5\frac{1}{6}$ is:-

$$\frac{22}{3} + \frac{31}{6} = \frac{44+31}{6} = \frac{75}{6} \quad \text{②}$$

Now subtracting ① from ②

$$\frac{75}{6} - \frac{74}{12} = \frac{150}{12} - \frac{74}{12} = \frac{76}{12} = \frac{19}{3} = 6\frac{1}{3} \text{ Ans}$$

Q. What should be added to $9\frac{4}{7}$ to get 16?

Soln:- Let the no. be y .

$$y + 9\frac{4}{7} = 16$$

$$y = 16 - 9\frac{4}{7} = 16 - \frac{67}{7}$$

$$y = \frac{16}{1} - \frac{67}{7} = \frac{112-67}{7} = \frac{45}{7} = 6\frac{3}{7} \text{ Ans}$$

Q. What must be subtracted from $9\frac{1}{6}$ to get $6\frac{1}{9}$?

Soln:- Let the subtracted no. be y .

$$\frac{55}{6} - y = \frac{55}{9}$$

$$y = \frac{55}{6} - \frac{55}{9} = \frac{495}{54} - \frac{330}{54} = \frac{165}{54}$$

$$= \frac{55}{18} = 3\frac{1}{8} \text{ Ans}$$