



Exercise 5E

Q1

Answer :

The given fractions are like fractions.

We know:

$$\text{Sum of like fractions} = \frac{\text{Sum of the numerators}}{\text{Common denominator}}$$

Thus, we have:

$$\frac{5}{8} + \frac{1}{8} = \frac{(5+1)}{8} = \frac{\cancel{8}^3}{\cancel{8}_4} = \frac{3}{4}$$

Q2

Answer :

The given fractions are like fractions.

We know:

$$\text{Sum of like fractions} = \frac{\text{Sum of the numerators}}{\text{Common denominator}}$$

Thus, we have:

$$\frac{4}{9} + \frac{8}{9} = \frac{(4+8)}{9} = \frac{\cancel{12}^4}{\cancel{9}_3} = \frac{4}{3} = 1 \frac{1}{3}$$

Q3

Answer :

The given fractions are like fractions.

We know:

$$\text{Sum of like fractions} = \frac{\text{Sum of the numerators}}{\text{Common denominator}}$$

Thus, we have:

$$1 \frac{3}{5} + 2 \frac{4}{5} = \frac{8}{5} + \frac{14}{5} = \frac{(8+14)}{5} = \frac{22}{5} = 4 \frac{2}{5}$$

Q4

Answer :

L.C.M. of 9 and 6 = $(2 \times 3 \times 3) = 18$

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

Now, we have:

$$\begin{aligned} \frac{2}{9} &= \frac{2 \times 2}{9 \times 2} = \frac{4}{18}; \quad \frac{5}{6} = \frac{5 \times 3}{6 \times 3} = \frac{15}{18} \\ \therefore \frac{2}{9} + \frac{5}{6} &= \frac{4}{18} + \frac{15}{18} = \frac{(4+15)}{18} = \frac{19}{18} = 1 \frac{1}{18} \end{aligned}$$

Q5

Answer :

L.C.M. of 12 and 16 = $(2 \times 2 \times 2 \times 2 \times 3) = 48$

$$\begin{array}{r|l} 2 & 12,16 \\ \hline 2 & 6,8 \\ \hline 2 & 3,4 \\ \hline 2 & 3,2 \\ \hline 3 & 3,1 \\ \hline & 1,1 \end{array}$$

Now, we have:

$$\begin{aligned} \frac{7}{12} &= \frac{7 \times 4}{12 \times 4} = \frac{28}{48}; \quad \frac{9}{16} = \frac{9 \times 3}{16 \times 3} = \frac{27}{48} \\ \therefore \frac{7}{12} + \frac{9}{16} &= \frac{28}{48} + \frac{27}{48} = \frac{(28+27)}{48} = \frac{55}{48} = 1 \frac{7}{48} \end{aligned}$$

Q6

Answer :

L.C.M. of 15 and 20 = $(3 \times 5 \times 2 \times 2) = 60$

$$\begin{array}{r|l} 5 & 15,20 \\ \hline 3 & 3,4 \\ \hline 2 & 1,4 \\ \hline 2 & 1,2 \\ \hline & 1,1 \end{array}$$

$$\begin{aligned}\therefore \frac{4}{15} + \frac{17}{20} &= \frac{(16+51)}{60} \\ \{[60 \div 15 = 4, 4 \times 4 = 16] \text{ and } [60 \div 20 = 3, 17 \times 3 = 51]\} \\ &= \frac{67}{60} = 1 \frac{7}{60}\end{aligned}$$

Q7

Answer :

We have:

$$\begin{array}{r|l} 2 & 4,6 \\ \hline 2 & 2,3 \\ \hline 3 & 1,3 \\ \hline & 1,1 \end{array}$$

$$2 \frac{3}{4} + 5 \frac{5}{6}$$

$$= \frac{11}{4} + \frac{35}{6}$$

$$= \frac{(66+140)}{24}$$

$$\{[24 \div 4 = 6, 6 \times 11 = 66] \text{ and } [24 \div 6 = 4, 4 \times 35 = 140]\}$$

$$= \frac{206}{24} = \frac{103}{12} = 8 \frac{7}{12}$$

$$\text{L.C.M. of 4 and 6} = (2 \times 2 \times 3) = 12$$

Q8

Answer :

We have:

$$\begin{array}{r|l} 2 & 8,12 \\ \hline 2 & 4,6 \\ \hline 2 & 2,3 \\ \hline 3 & 1,3 \\ \hline & 1,1 \end{array}$$

$$3 \frac{1}{8} + 1 \frac{5}{12}$$

$$= \frac{25}{8} + \frac{17}{12}$$

$$= \frac{(75+34)}{24}$$

$$\{[24 \div 8 = 3, 3 \times 25 = 75] \text{ and } [24 \div 12 = 2, 2 \times 17 = 34]\}$$

$$= \frac{109}{24} = 4 \frac{13}{24}$$

$$\text{L.C.M. of 8 and 12} = (2 \times 2 \times 2 \times 3) = 24$$

Q9

Answer :

We have:

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

$$2 \frac{7}{10} + 3 \frac{8}{15}$$

$$= \frac{27}{10} + \frac{53}{15}$$

$$= \frac{(81+106)}{30}$$

$$\{[30 \div 10 = 3, 3 \times 27 = 81] \text{ and } [30 \div 15 = 2, 2 \times 53 = 106]\}$$

$$= \frac{187}{30} = 6 \frac{7}{30}$$

$$\text{L.C.M. of 10 and 15} = (2 \times 3 \times 5) = 30$$

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