Exercise 5E

Q1

Answer :

The given fractions are like fractions.

We know:

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

Thus, we have:

$$\frac{5}{8} + \frac{1}{8} = \frac{(5+1)}{8} = \frac{\cancel{6}^{3}}{\cancel{8}_{4}} = \frac{3}{4}$$

Q2

Answer :

The given fractions are like fractions.

We know:

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

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:

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 × 3 × 3) = 18

3	9,6
3	3,2
2	1,2
	1,1

Now, we have:

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

$$\therefore \frac{2}{9} + \frac{5}{6} = \frac{4}{18} + \frac{15}{18} = \frac{(4+15)}{18} = \frac{19}{18} = 1\frac{1}{18}$$

Q5

Answer :

L.C.M. of 12 and 16 = (2 × 2 × 2 × 2 × 3) = 48

2	12,16
2	6,8
2	3,4
2	3,2
3	3,1
	1,1

Now, we have:

$$\frac{7}{12} = \frac{7 \times 4}{12 \times 4} = \frac{28}{48}; \frac{9}{16} = \frac{9 \times 3}{16 \times 3} = \frac{27}{48}$$

$$\therefore \frac{7}{12} + \frac{9}{16} = \frac{28}{48} + \frac{27}{48} = \frac{(28+27)}{48} = \frac{55}{48} = 1\frac{7}{48}$$

Q6

Answer :

L.C.M. of 15 and 20 = (3 × 5 × 2 × 2) = 60

5	15,20
3	3,4
2	1,4
2	1,2
	1,1

$\therefore \frac{4}{15} + \frac{17}{20} = \frac{(16+51)}{60}$

$\{[60 \div 15 = 4, 4 \times 4 = 16] \text{ and } [60 \div 20 = 3, 17 \times 3 = 51]\}$

$= \frac{67}{60} = 1\frac{7}{60}$

Q7

Answer :

We have:

2	4,6
2	2,3
3	1,3
	1,1

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

$= \frac{11}{4} + \frac{35}{6}$ L.C.M. of 4 and 6 $= \left(2 \times 2 \times 3\right) = 12$

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

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

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

Q8

Answer :

We have:

2	8,12
2	4,6
2	2,3
3	1,3
	1,1

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

$= \frac{25}{8} + \frac{17}{12}$ L.C.M. of 8 and 12 $= \left(2 \times 2 \times 2 \times 3\right) = 24$

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

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

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

Q9

Answer :

We have:

5	10,15
2	2,3
3	1,3
	1,1

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

$= \frac{27}{10} + \frac{53}{15}$ L.C.M. of 10 and 15 $= \left(2 \times 3 \times 5\right) = 30$

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

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

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

********** END **********