



## Exercise 5E

Q10

**Answer :**

We have:

$$\begin{array}{r} 3 \overline{) 3,6} \\ 2 \overline{) 1,2} \\ \hline 1,1 \end{array}$$

$$\begin{aligned} & 3\frac{2}{3} + 1\frac{5}{6} + 2 \\ &= \frac{11}{3} + \frac{11}{6} + \frac{2}{1} \\ &= \frac{(22 + 11 + 12)}{6} \end{aligned}$$

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

$$\begin{aligned} & \{[6 \div 3 = 2, 2 \times 11 = 22], [6 \div 6 = 1, 1 \times 11 = 11] \text{ and } [6 \div 1 = 6, 6 \times 2 = 12]\} \\ &= \frac{\cancel{18}^{15}}{\cancel{6}_2} = \frac{15}{2} = 7\frac{1}{2} \end{aligned}$$

Q11

**Answer :**

We have:

$$\begin{array}{r} 5 \overline{) 15,20} \\ 3 \overline{) 3,4} \\ 2 \overline{) 1,4} \\ 2 \overline{) 1,2} \\ \hline 1,1 \end{array}$$

$$\begin{aligned} & 3 + 1\frac{4}{15} + 1\frac{3}{20} \\ &= \frac{3}{1} + \frac{19}{15} + \frac{23}{20} \\ &60 \end{aligned}$$

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

$$\begin{aligned} & \{[60 \div 1 = 60, 60 \times 3 = 180], [60 \div 15 = 4, 4 \times 19 = 76] \text{ and } [60 \div 20 = 3, 3 \times 23 = 69]\} \\ &= \frac{\cancel{325}^{65}}{\cancel{60}_{12}} = \frac{65}{12} = 5\frac{5}{12} \end{aligned}$$

Q12

**Answer :**

We have:

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

$$3\frac{1}{3} + 4\frac{1}{4} + 6\frac{1}{6}$$

$$= \frac{10}{3} + \frac{17}{4} + \frac{37}{6}$$

$$= \frac{(40 + 51 + 74)}{12}$$

$$\{[12 \div 3 = 4, 4 \times 10 = 40], [12 \div 4 = 3, 3 \times 17 = 51] \text{ and } [12 \div 6 = 2, 2 \times 37 =$$

$$= \frac{165}{12} = \frac{55}{4} = 13\frac{3}{4}$$

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

Q13

**Answer :**

We have:

$$\begin{array}{r|l} 3 & 3,6,9,18 \\ \hline 2 & 1,2,3,6 \\ \hline 3 & 1,1,3,3 \\ \hline & 1,1,1,1 \end{array}$$

$$\frac{2}{3} + 3\frac{1}{6} + 4\frac{2}{9} + 2\frac{5}{18}$$

$$= \frac{2}{3} + \frac{19}{6} + \frac{38}{9} + \frac{41}{18}$$

$$= 18$$

$$= \frac{(12 + 57 + 76 + 41)}{18}$$

$$\{[18 \div 3 = 6, 6 \times 2 = 12], [18 \div 6 = 3, 3 \times 19 = 57],$$

$$[18 \div 9 = 2, 2 \times 38 = 76] \text{ and } [18 \div 18 = 1, 1 \times 41 = 41]\}$$

$$= \frac{186}{18} = \frac{31}{3} = 10\frac{1}{3}$$

$$\text{L.C.M. of 3, 6 and 9} = (2 \times 3 \times 3)$$

Q14

**Answer :**

We have:

$$\begin{array}{r}
 3 \overline{) 3, 4, 6, 12} \\
 2 \overline{) 1, 4, 2, 4} \\
 2 \overline{) 1, 2, 1, 2} \\
 1, 1, 1, 1 \\
 2 \frac{1}{3} + 1 \frac{1}{4} + 2 \frac{5}{6} + 3 \frac{7}{12} \\
 = \frac{7}{3} + \frac{5}{4} + \frac{17}{6} + \frac{43}{12} \qquad \text{L.C.M. of 3, 4, 6 and 12 =} \\
 \left( 2 \times 2 \times 3 \right) = 12 \\
 = \frac{(28 + 15 + 34 + 43)}{12}
 \end{array}$$

$$\begin{aligned}
 & \{ [12 \div 3 = 4, 4 \times 7 = 28], [12 \div 4 = 3, 3 \times 5 = 15], \\
 & [12 \div 6 = 2, 2 \times 17 = 34] \text{ and } [12 \div 12 = 1, 1 \times 43 = 43] \} \\
 & = \frac{120^{10}}{12^1} = 10
 \end{aligned}$$

Q15

**Answer :**

We have:

$$\begin{array}{r}
 2 \overline{) 4, 8, 16} \\
 2 \overline{) 2, 4, 8} \\
 2 \overline{) 1, 2, 4} \\
 2 \overline{) 1, 1, 2} \\
 1, 1, 1 \\
 2 + \frac{3}{4} + 1 \frac{5}{8} + 3 \frac{7}{16} \\
 = \frac{2}{1} + \frac{3}{4} + \frac{13}{8} + \frac{55}{16} \qquad \text{L.C.M. of 4, 8, and 16 =} \\
 \left( 2 \times 2 \times 2 \times 2 \right) = 16 \\
 = \frac{(32 + 12 + 26 + 55)}{16}
 \end{array}$$

$$\begin{aligned}
 & \{ [16 \div 1 = 16, 16 \times 2 = 32], [16 \div 4 = 4, 4 \times 3 = 12], \\
 & [16 \div 8 = 2, 2 \times 13 = 26] \text{ and } [16 \div 16 = 1, 1 \times 55 = 55] \} \\
 & = \frac{125}{16} = 7 \frac{13}{16}
 \end{aligned}$$

Q16

**Answer :**

Total cost of both articles = Cost of pencil + Cost of eraser

Thus, we have:

$$\begin{aligned} \text{Rs } 3\frac{2}{5} + \text{Rs } 2\frac{7}{10} &= \frac{17}{5} + \frac{27}{10} = \frac{(34 + 27)}{10} \\ \left( \text{L.C.M. of 5 and 10} = (5 \times 2) = 10 \right) &= \frac{61}{10} = \text{Rs } 6\frac{1}{10} \end{aligned}$$

Hence, the total cost of both the articles is **Rs  $6\frac{1}{10}$** .

Q17

**Answer :**

Total cloth purchased by Sohini = Cloth for kurta + Cloth for pyjamas

Thus, we have:

$$\begin{aligned} \left( 4\frac{1}{2} + 2\frac{2}{3} \right) \text{ m} &= \left( \frac{9}{2} + \frac{8}{3} \right) \text{ m} \quad \left( \text{L.C.M. of 2 and 3} = (2 \times 3) = 6 \right) = \\ \left( \frac{27 + 16}{6} \right) \text{ m} \end{aligned}$$

$$\{ [6 \div 2 = 3, 3 \times 9 = 27] \text{ and } [6 \div 3 = 2, 2 \times 8 = 16] \} = \left( \frac{43}{6} \right) \text{ m} = 7\frac{1}{6} \text{ m}$$

$\therefore$  Total length of cloth purchased =  **$7\frac{1}{6} \text{ m}$**

Q18

**Answer :**

Distance from Kishan's house to school = Distance covered by him by rickshaw + Distance covered by him on foot

Thus, we have:

$$\begin{aligned} \left( 4\frac{3}{4} + 1\frac{1}{2} \right) \text{ km} \\ = \left( \frac{19}{4} + \frac{3}{2} \right) \text{ km} = \left( \frac{19 + 6}{4} \right) \text{ km} \\ \left( \text{L.C.M. of 2 and 4} = (2 \times 2) = 4 \right) = \left( \frac{25}{4} \right) \text{ km} = 6\frac{1}{4} \text{ km} \end{aligned}$$

$$\begin{array}{r} 2 \overline{) 2,4} \\ 2 \overline{) 1,2} \\ \hline 1,1 \end{array}$$

Hence, the distance from Kishan's house to school is  **$6\frac{1}{4} \text{ km}$**

Q19

**Answer :**

Weight of the cylinder filled with gas = Weight of the empty cylinder + Weight of the gas inside the cylinder

Thus, we have:

$$\begin{aligned} \left( 16\frac{4}{5} + 14\frac{2}{3} \right) \text{ kg} \\ = \left( \frac{84}{5} + \frac{44}{3} \right) \text{ kg} \quad \left( \text{L.C.M. of 5 and 3} = (3 \times 5) = 15 \right) = \\ \left( \frac{252 + 220}{15} \right) \text{ kg} = \left( \frac{472}{15} \right) \text{ kg} = 31\frac{7}{15} \text{ kg} \end{aligned}$$

Hence, the weight of the cylinder filled with gas is  **$31\frac{7}{15} \text{ kg}$**

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