

CLASS NOTES

CLASS: VI

DATE: 26/10/2021

SUBJECT: MATHEMATICS

TOPIC: FRACTION

EXERCISE – 7.6

Q.1 Solve

Solution:

$$\begin{aligned} \text{(b)} \quad & \frac{3}{10} + \frac{7}{15} \\ & = \frac{(3 \times 3) + (7 \times 2)}{30} \quad \text{(Taking 30 as L.C.M)} \\ & = \frac{9 + 14}{30} = \frac{23}{30} \end{aligned}$$

$$\begin{aligned} \text{(c)} \quad & \frac{4}{9} + \frac{2}{7} \\ & = \frac{(4 \times 7) + (2 \times 9)}{63} \quad \text{(Taking 63 as L.C.M)} \\ & = \frac{28 + 18}{63} = \frac{46}{63} \end{aligned}$$

$$\begin{aligned} \text{(d)} \quad & \frac{5}{7} + \frac{1}{3} \\ & = \frac{(5 \times 3) + (1 \times 7)}{21} \quad \text{(Taking 21 as L.C.M)} \\ & = \frac{15 + 7}{21} = \frac{22}{21} \end{aligned}$$

$$\begin{aligned} \text{(e)} \quad & \frac{2}{5} + \frac{1}{6} \\ & = \frac{(2 \times 6) + (1 \times 5)}{30} = \frac{17}{30} \quad \text{(Taking 30 as L.C.M)} \end{aligned}$$

$$\begin{aligned} \text{(g)} \quad & \frac{3}{4} - \frac{1}{3} \\ & = \frac{(3 \times 3) - (1 \times 4)}{12} \quad \text{(Taking 12 as LCM)} \\ & = \frac{9 - 4}{12} = \frac{5}{12} \end{aligned}$$

$$\begin{aligned} \text{(i)} \quad & \frac{2}{3} + \frac{3}{4} + \frac{1}{2} \\ & = \frac{(2 \times 4) + (3 \times 3) + (1 \times 6)}{12} \quad \text{(Taking 12 as L.C.M)} \\ & = \frac{8 + 9 + 6}{12} = \frac{23}{12} \end{aligned}$$

$$\begin{aligned} \text{(j)} \quad & \frac{1}{2} + \frac{1}{3} + \frac{1}{6} \\ & = \frac{(1 \times 3) + (1 \times 2) + (1 \times 1)}{6} \quad \text{(Taking 6 as LCM)} \\ & = \frac{3 + 2 + 1}{6} = \frac{6}{6} = 1 \end{aligned}$$

$$\begin{aligned} \text{(l)} \quad & 4\frac{2}{3} + 3\frac{1}{4} \\ & = \frac{(3 \times 4) + 2}{3} + \frac{(3 \times 4) + 1}{4} \\ & = \frac{14}{3} + \frac{13}{4} \quad \text{(Taking 12 as L.C.M)} \\ & = \frac{(14 \times 4) + (13 \times 3)}{12} = \frac{56 + 39}{12} = \frac{95}{12} \end{aligned}$$

Q.2 Naina was given $1\frac{1}{2}$ piece of cake and Najma was given $1\frac{1}{3}$ piece of cake. Find the total amount of cake was given to both of them.

Solution:

$$\text{Fraction Naina got} = 1\frac{1}{2} = \frac{3}{2}$$

$$\text{Fraction Najma got} = 1\frac{1}{3} = \frac{4}{3}$$

$$\begin{aligned} \text{Total amount of cake given to them} &= \frac{3}{2} + \frac{4}{3} = \frac{3 \times 3 + 4 \times 2}{6} \\ &= \frac{9+8}{6} = \frac{17}{6} = 2\frac{5}{6} \end{aligned}$$

Q.4 Fill in the boxes:

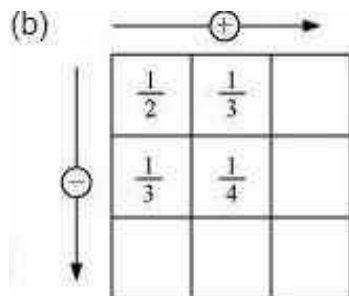
$$(a) \square - \frac{5}{8} = \frac{1}{4}$$

$$\square = \frac{1}{4} + \frac{5}{8} = \frac{1 \times 2 + 5}{8} = \frac{2+5}{8} = \frac{7}{8}$$

$$(c) \frac{1}{2} - \square = \frac{1}{6}$$

$$\square = \frac{1}{2} - \frac{1}{6} = \frac{(1 \times 3) - 1}{6} = \frac{3-1}{6} = \frac{2}{6} = \frac{1}{3}$$

Q.5 Complete the addition-subtraction box.



Row - 1

$$\frac{1}{2} + \frac{1}{3} = \frac{(1 \times 3) + (1 \times 2)}{6} = \frac{3+2}{6} = \frac{5}{6}$$

Row - 2

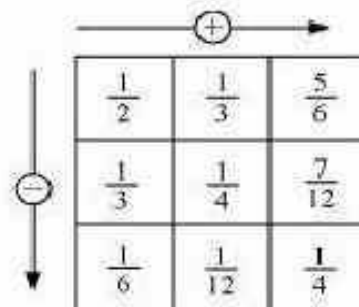
$$\frac{1}{3} + \frac{1}{4} = \frac{(1 \times 4) + (1 \times 3)}{12} = \frac{4+3}{12} = \frac{7}{12}$$

Column - 1 $\frac{1}{2} - \frac{1}{3} = \frac{(1 \times 3) - (1 \times 2)}{6} = \frac{3-2}{6} = \frac{1}{6}$

Column - 2 $\frac{1}{3} - \frac{1}{4} = \frac{(1 \times 4) - (1 \times 3)}{12} = \frac{4-3}{12} = \frac{1}{12}$

Last Row $\frac{1}{6} + \frac{1}{12} = \frac{(1 \times 2) + 1}{12} = \frac{2+1}{12} = \frac{3}{12} = \frac{1}{4}$

Hence,
the given box can be completed as



Q.7 Nandini's house is $\frac{9}{10}$ km from her school. She walked some distance and then took a bus for $\frac{1}{2}$ km to reach the school. How far did she walk?

Solution: Total distance from house to school = $\frac{9}{10}$ km.

Distance travelled by Nandini by bus = $\frac{1}{2}$ km

$$\therefore \text{Distance travelled by her on foot} = \frac{9}{10} \text{ km} - \frac{1}{2} \text{ km} = \left(\frac{9}{10} - \frac{1}{2} \right) \text{ km}$$

LCM of 10 and 2 = 10

$$\begin{aligned} \therefore \left(\frac{9}{10} - \frac{1}{2} \right) \text{ km} &= \left(\frac{9 \times 1}{10 \times 1} - \frac{1 \times 5}{2 \times 5} \right) \text{ km} \\ &= \left(\frac{9}{10} - \frac{5}{10} \right) \text{ km} = \left(\frac{9-5}{10} \right) \text{ km} \\ &= \frac{4}{10} \text{ km} = \frac{2}{5} \text{ km} \end{aligned}$$

Hence, the distance travelled by her on foot = $\frac{2}{5}$ km.

Q.8 Asha and Samuel have bookshelves of the same size partly filled with books. Asha's shelf is $\frac{5}{6}$ th full and Samuel's shelf is $\frac{2}{5}$ th full. Whose bookshelf is more full? By what fraction?

Solution: Asha's shelf is $\frac{5}{6}$ th full and Samuel's shelf is $\frac{2}{5}$ th full

Comparing $\frac{5}{6}$ and $\frac{2}{5}$, LCM of 6 and 5 = 30

$$\therefore \frac{5 \times 5}{6 \times 5} = \frac{25}{30} \text{ and } \frac{2 \times 6}{5 \times 6} = \frac{12}{30} \quad \text{Hence, } 25 > 12, \text{ So } \frac{5}{6} \text{ is more than } \frac{2}{5}.$$

Hence, Asha's shelf is full more than Samuel's shelf.

$$\text{Now, } \frac{5}{6} - \frac{2}{5} = \frac{25}{30} - \frac{12}{30} = \frac{25-12}{30} = \frac{13}{30}$$

Hence, $\frac{13}{30}$ th fraction is more full of Asha's shelf

Q.9 Jaidev takes $2\frac{1}{5}$ minutes to walk across the school ground. Rahul takes $\frac{7}{4}$ minutes to do the same. Who takes less time and by what fraction?

Solution: Time taken by Jaidev to walk across the school ground = $2\frac{1}{5} = \frac{11}{5}$ minutes

Time taken by Rahul to walk across the school ground = $\frac{7}{4}$ minutes

Now, the given fractions are $\frac{11}{5}$ and $\frac{7}{4}$

$$\frac{11}{5} \times \frac{4}{4} = \frac{44}{20} \text{ and } \frac{7}{4} \times \frac{5}{5} = \frac{35}{20} \quad \text{Here, } 35 < 44 \quad \therefore \frac{7}{4} < \frac{11}{5}.$$

So, the time take to cover the same distance by Rahul is less than that of Jaidev.

$$\frac{11}{5} - \frac{7}{4} = \frac{44}{20} - \frac{35}{20} = \frac{44-35}{20} = \frac{9}{20} \text{ minutes}$$

Hence, Rahul takes $\frac{9}{20}$ minutes less to across the school ground.

Home Work

Exercise -7.6 Q.1-a, f, h, K Q.2, Q.4 -b, Q.5 -a, Q.6.