Operations on Rational Numbers Ex 5.2 Q11

Answer :

Let x be the number that should be subtracted from $\frac{3}{7}$ to get $\frac{5}{4}$.

Then, according to the question, we have

$\frac{3}{7} - x = \frac{5}{4}$

$\Rightarrow x = \frac{3}{7} - \frac{5}{4} = \frac{3\times4-5\times7}{28} = \frac{12-35}{28} = \frac{-23}{28}$

Operations on Rational Numbers Ex 5.2 Q12

Answer :

$\frac{2}{3} + \frac{3}{5} = \frac{2\times5}{3\times5} + \frac{3\times3}{5\times3} = \frac{10}{15} + \frac{9}{15} = \frac{19}{15}$

Let x be the number that should be added to $\frac{19}{15}$ to get $\frac{-2}{15}$

Then, we have

$\frac{19}{15} + x = \frac{-2}{15}$

$\Rightarrow x = \frac{-2}{15} - \frac{19}{15}$

$= \frac{-21}{15}$

$= \frac{-7\times3}{5\times3}$

$= \frac{-7}{5}$

Operations on Rational Numbers Ex 5.2 Q13

Answer :

Let x be added to $\left(\frac{1}{2} + \frac{1}{3} + \frac{1}{5}\right) = \left(\frac{1\times15}{2\times15} + \frac{1\times10}{3\times10} + \frac{1\times6}{5\times6}\right) = \left(\frac{15}{30} + \frac{10}{30} + \frac{6}{30}\right) = \frac{31}{30}$ to get 3.

Then, we have

$\frac{31}{30} + x = 3$

$\Rightarrow x = 3 - \frac{31}{30} = \frac{3\times30}{1\times30} - \frac{31}{30} = \frac{90}{30} - \frac{31}{30} = \frac{59}{30}$

Operations on Rational Numbers Ex 5.2 Q14

Answer :

Let x be the number that should be subtracted from $\frac{3}{4} - \frac{2}{3} = \frac{3\times3}{4\times3} - \frac{2\times4}{3\times4} = \frac{9}{12} - \frac{8}{12} = \frac{1}{12}$ to get $\frac{-1}{6}$.

Then, we have

$\frac{1}{12} - x = \frac{-1}{6}$

$\Rightarrow x = \frac{1}{12} - \frac{-1}{6} = \frac{1}{12} - \frac{-1\times2}{6\times2} = \frac{1}{12} - \frac{-2}{12} = \frac{3}{12} = \frac{1}{4}$

Operations on Rational Numbers Ex 5.2 Q15

Answer :

$\left(\text{i}\right)\ \frac{-3}{2}+\frac{5}{4}-\frac{7}{4}=\frac{-3\times2}{2\times2}+\frac{5}{4}-\frac{7}{4}=\frac{-6+5-7}{4}=\frac{-8}{4}=-2$

$\left(\text{ii}\right)\ \frac{5}{3}-\frac{7}{6}+\frac{-2}{3}=\frac{5\times2}{3\times2}-\frac{7}{6}+\frac{-2\times2}{3\times2}=\frac{10-7-4}{6}=\frac{-1}{6}$

$\left(\text{iii}\right)\ \frac{5}{4}-\frac{7}{6}-\frac{-2}{3}=\frac{5\times3}{4\times3}-\frac{7\times2}{6\times2}-\frac{-2\times4}{3\times4}=\frac{15-14+8}{12}=\frac{9}{12}=\frac{3}{4}$

$\left(\text{iv}\right)\ \frac{-2}{5}-\frac{-3}{10}-\frac{-4}{7}=\frac{-2\times14}{5\times14}-\frac{-3\times7}{10\times7}-\frac{-4\times10}{7\times10}=\frac{-28+21+40}{70}=\frac{33}{70}$

Operations on Rational Numbers Ex 5.2 Q16

Answer :

$\text{(i)}\ \frac{-4}{13}-\frac{-3}{26}=\frac{-4\times2}{13\times2}-\frac{-3}{26}=\frac{-8+3}{26}=\frac{-5}{26}$

$\left(\text{ii}\right)\ \frac{-9}{14}+\text{x}=-1$

$\Rightarrow \text{x}=-1-\frac{-9}{14}=\frac{-14+9}{14}=\frac{-5}{14}$

$\left(\text{iii}\right)\ \frac{-7}{9}+\text{x}=3$

$\Rightarrow \text{x}=\frac{3\times9}{1\times9}-\frac{-7}{9}=\frac{27+7}{9}=\frac{34}{9}$

(IV)

$x+\frac{15}{23}=4$

$\Rightarrow x=4-\frac{15}{23}=\frac{4\times23}{1\times23}-\frac{15}{23}=\frac{92-15}{23}=\frac{77}{23}$

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