



Operations on Rational Numbers Ex 5.1 Q3

Answer :

$$(i) \frac{8}{9} + \frac{-11}{6}$$

LCM of the denominators 9 and 6 is 18.

Now, we express $\frac{8}{9}$ and $\frac{-11}{6}$ into forms in which both of them have the same denominator as LCM.

$$\frac{8}{9} = \frac{8 \times 2}{9 \times 2}$$

$$\frac{-11}{6} = \frac{-11 \times 3}{6 \times 3}$$

Therefore,

$$\frac{8 \times 2}{9 \times 2} + \frac{-11 \times 3}{6 \times 3} = \frac{16 - 33}{18} = \frac{-17}{18}$$

$$(ii) \frac{-5}{16} + \frac{7}{24}$$

LCM of the denominators 16 and 24 is 48.

Now, we express $\frac{-5}{16}$ and $\frac{7}{24}$ into forms in which both of them have the same denominator as LCM.

$$\frac{-5}{16} = \frac{-5 \times 3}{16 \times 3}$$

$$\frac{7}{24} = \frac{7 \times 2}{24 \times 2}$$

Therefore,

$$\frac{-5 \times 3}{16 \times 3} + \frac{7 \times 2}{24 \times 2} = \frac{-15 + 14}{48} = \frac{-1}{48}$$

$$(iii) \frac{1}{-12} + \frac{2}{-15}$$

LCM of the denominators 12 and 15 is 60.

Now, we express $\frac{1}{-12}$ and $\frac{2}{-15}$ into forms in which both of them have the same denominator as LCM.

$$\frac{-1}{12} = \frac{-1 \times 5}{12 \times 5}$$

$$\frac{-2}{15} = \frac{-2 \times 4}{15 \times 4}$$

Therefore,

$$\frac{-1 \times 5}{12 \times 5} + \frac{-2 \times 4}{15 \times 4} = \frac{-5 - 8}{60} = \frac{-13}{60}$$

$$(iv) \frac{-8}{19} + \frac{-4}{57}$$

LCM of the denominators 19 and 57 is 57.

Now, we express $\frac{-8}{19}$ and $\frac{-4}{57}$ into forms in which both of them have the same denominator as LCM.

$$\frac{8}{9} = \frac{-8 \times 3}{19 \times 3}$$

$$\frac{-4}{57} = \frac{-4 \times 1}{57 \times 1}$$

Therefore,

$$\frac{-8 \times 3}{19 \times 3} + \frac{-4}{57} = \frac{-24 - 4}{57} = \frac{-28}{57}$$

Operations on Rational Numbers Ex 5.1 Q4

Answer :

$$(i) \quad \frac{-12}{5} + \frac{43}{10}$$

LCM of the denominators 5 and 10 is 10.

Now, we express $\frac{-12}{5}$ and $\frac{43}{10}$ into forms in which both of them have the same denominator as LCM.

$$\frac{-12}{5} = \frac{12 \times 2}{5 \times 2}$$

$$\frac{43}{10} = \frac{43 \times 1}{10 \times 1}$$

Therefore,

$$\frac{-12 \times 2}{5 \times 2} + \frac{43}{10} = \frac{-24+43}{10} = \frac{19}{10} = 1 \frac{9}{10}$$

$$(ii) \quad \frac{24}{7} + \frac{-11}{4}$$

LCM of the denominators 7 and 4 is 28.

Now, we express $\frac{24}{7}$ and $\frac{-11}{4}$ into forms in which both of them have the same denominator as LCM.

$$\frac{24}{7} = \frac{24 \times 4}{7 \times 4}$$

$$\frac{-11}{4} = \frac{-11 \times 7}{4 \times 7}$$

Therefore,

$$\frac{24 \times 4}{7 \times 4} + \frac{-11 \times 7}{4 \times 7} = \frac{96-77}{28} = \frac{19}{28}$$

$$(iii) \quad \frac{-31}{6} + \frac{-27}{8}$$

LCM of the denominators 6 and 8 is 24.

Now, we express $\frac{-31}{6}$ and $\frac{-27}{8}$ into forms in which both of them have the same denominator as LCM.

$$\frac{-31}{6} = \frac{-31 \times 4}{6 \times 4}$$

$$\frac{-27}{8} = \frac{-27 \times 3}{8 \times 3}$$

Therefore,

$$\frac{-31 \times 4}{6 \times 4} + \frac{-27 \times 3}{8 \times 3} = \frac{-124-81}{24} = \frac{-205}{24}$$

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