



Rational Numbers Ex 1.1 Q1

Answer :

(i)

$$\frac{-5}{7} + \frac{3}{7} = \frac{-5+3}{7} = \frac{-2}{7}$$

(ii)

$$\frac{-15}{4} + \frac{7}{4} = \frac{-15+7}{4} = \frac{-8}{4} = -2$$

(iii)

$$\frac{-8}{11} + \frac{-4}{11} = \frac{-8-4}{11} = \frac{-12}{11}$$

(iv)

$$\frac{6}{13} + \frac{-9}{13} = \frac{6-9}{13} = \frac{-3}{13}$$

Rational Numbers Ex 1.1 Q2

Answer :

(i)

Clearly, denominators of the given numbers are positive.

The L.C.M. of denominators 4 and 8 is 8.

Now, we will express $\frac{3}{4}$ in the form in which it takes the denominator is 8.

$$\begin{aligned} \frac{3 \times 2}{4 \times 2} &= \frac{6}{8} \\ \frac{3}{4} + \frac{-5}{8} &= \frac{6}{8} + \frac{-5}{8} \\ &= \frac{6+(-5)}{8} \\ &= \frac{6-5}{8} \\ &= \frac{1}{8} \end{aligned}$$

(ii)

$$\frac{5}{-9} + \frac{7}{3} = \frac{-5}{9} + \frac{7}{3}$$

The L.C.M. of denominators 9 and 3 is 9.

Now, we will express $\frac{7}{3}$ in the form in which it takes the denominator is 9.

$$\begin{aligned} \frac{7 \times 3}{3 \times 3} &= \frac{21}{9} \\ \frac{-5}{9} + \frac{7}{3} &= \frac{-5}{9} + \frac{21}{9} \\ &= \frac{(-5)+21}{9} \\ &= \frac{-5+21}{9} \end{aligned}$$

$$= \frac{16}{9}$$

(iii)

$$-3 + \frac{3}{5} = \frac{-3}{1} + \frac{3}{5}$$

The L.C.M. of denominators 1 and 5 is 5.

Now, we will express $\frac{-3}{1}$ in the form in which it takes the denominator 5.

$$\frac{-3 \times 5}{1 \times 5} = \frac{-15}{5}$$

So

$$\frac{-3}{1} + \frac{3}{5} = \frac{-15}{5} + \frac{3}{5}$$

$$= \frac{-15+3}{5}$$

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

(iv)

The L.C.M. of denominators 27 and 18 is 54.

Now, we will express $\frac{-7}{27}$ and $\frac{11}{18}$ in the form in which they take the denominator 54.

$$\frac{-7 \times 2}{27 \times 2} = \frac{-14}{54}$$

$$\frac{11 \times 3}{18 \times 3} = \frac{33}{54}$$

$$\frac{-7}{27} + \frac{11}{18} = \frac{-14}{54} + \frac{33}{54}$$

$$= \frac{-14+33}{54}$$

$$= \frac{19}{54}$$

(v)

We have

$$\frac{31}{4} + \frac{-5}{8} = \frac{-31}{4} + \frac{-5}{8}$$

The L.C.M. of denominators 4 and 8 is 8.

Now, we will express $\frac{-31}{4}$ in the form in which it takes the denominator 8.

$$\frac{-31 \times 2}{4 \times 2} = \frac{-62}{8}$$

So

$$\frac{-31}{4} + \frac{-5}{8} = \frac{-62}{8} + \frac{-5}{8}$$

$$= \frac{(-62)+(-5)}{8}$$

$$= \frac{-62-5}{8}$$

$$= \frac{-67}{8}$$

(vi)

The L.C.M. of denominators 36 and 12 is 36.

Now, we will express $\frac{-7}{12}$ in the form in which it takes the denominator 36.

$$\frac{-7 \times 3}{12 \times 3} = \frac{-21}{36}$$

So

$$\frac{5}{36} + \frac{-7}{12} = \frac{5}{36} + \frac{-21}{36}$$

$$= \frac{5+(-21)}{36}$$

$$= \frac{5-21}{36}$$

$$= \frac{-16}{36}$$

$$= \frac{-4}{9}$$

(vii)

The L.C.M. of denominators 16 and 24 is 48.

Now, we will express $\frac{-5}{16}$ and $\frac{7}{24}$ in the form in which they take the denominator 48.

$$\frac{-5 \times 3}{16 \times 3} = \frac{-15}{48}$$

$$\frac{7 \times 2}{24 \times 2} = \frac{14}{48}$$

So

$$\frac{-5}{16} + \frac{7}{24} = \frac{-15}{48} + \frac{14}{48}$$

$$= \frac{(-15)+14}{48}$$

$$= \frac{-15+14}{48}$$

$$= \frac{-1}{48}$$

(viii)

$$\frac{7}{-18} + \frac{8}{27} = \frac{-7}{18} + \frac{8}{27}$$

The L.C.M. of denominators 18 and 27 is 54.

Now, we will express $\frac{-7}{18}$ and $\frac{8}{27}$ in the form in which they take the denominator 54.

$$\frac{-7 \times 3}{18 \times 3} = \frac{-21}{54}$$

$$\frac{8 \times 2}{27 \times 2} = \frac{16}{54}$$

So

$$\frac{-7}{18} + \frac{8}{27} = \frac{-21}{54} + \frac{16}{54}$$

$$= \frac{-21+16}{54}$$

$$= \frac{-5}{54}$$

$$= \frac{-5}{54}$$

***** END *****