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.

$\frac{3\times2}{4\times2} = \frac{6}{8}$

$\frac{3}{4} + \frac{-5}{8} = \frac{6}{8} + \frac{-5}{8}$

$= \frac{6+(-5)}{8}$

$= \frac{6-5}{8}$

$= \frac{1}{8}$

(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.

$\frac{7\times3}{3\times3} = \frac{21}{9}$

$\frac{-5}{9} + \frac{7}{3} = \frac{-5}{9} + \frac{21}{9}$

$= \frac{(-5)+21}{9}$

$= \frac{-5+21}{9}$

$= \frac{16}{9}$

(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.

$\frac{-3\times5}{1\times5} = \frac{-15}{5}$

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.

$\frac{-7\times2}{27\times2} = \frac{-14}{54}$

$\frac{11\times3}{18\times3} = \frac{33}{54}$

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

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

$= \frac{19}{54}$

(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.

$\frac{-31\times2}{4\times2} = \frac{-62}{8}$

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.

$\frac{-7\times3}{12\times3} = \frac{-21}{36}$

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.

$\frac{-5\times3}{16\times3} = \frac{-15}{48}$

$\frac{7\times2}{24\times2} = \frac{14}{48}$

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.

$\frac{-7\times3}{18\times3} = \frac{-21}{54}$

$\frac{8\times2}{27\times2} = \frac{16}{54}$

So

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

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

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

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

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