



Rational Numbers Ex 1.1 Q3

Answer :

(i)

$$\frac{8}{9} + \frac{-11}{6}$$

L.C.M. of the denominators 9 and 6 is 18.

Now, we will express $\frac{8}{9}$ and $\frac{-11}{6}$ in the form in which they take the denominator 18.

$$\frac{8 \times 2}{9 \times 2} = \frac{16}{18}$$

$$\frac{-11 \times 3}{6 \times 3} = \frac{-33}{18}$$

$$\frac{8}{9} + \frac{-11}{6} = \frac{16}{18} + \frac{-33}{18}$$

$$= \frac{16 + (-33)}{18}$$

$$= \frac{16 - 33}{18}$$

$$= \frac{-17}{18}$$

(ii)

$$3 + \frac{5}{-7} = \frac{3}{1} + \frac{-5}{7}$$

L.C.M. of the denominators 1 and 7 is 7.

Now, we will express $\frac{3}{1}$ in the form in which it takes the denominator 7.

$$\frac{3 \times 7}{1 \times 7} = \frac{21}{7}$$

$$\frac{3}{1} + \frac{-5}{7} = \frac{21}{7} + \frac{-5}{7}$$

$$= \frac{21 + (-5)}{7}$$

$$= \frac{21 - 5}{7}$$

$$= \frac{16}{7}$$

(iii)

$$\frac{1}{-12} + \frac{2}{-15} = \frac{-1}{12} + \frac{-2}{15}$$

L.C.M. of the denominators 12 and 15 is 60.

Now, we will express $\frac{-1}{12}$ and $\frac{-2}{15}$ in the form in which they take the denominator 60.

$$\frac{-1 \times 5}{12 \times 5} = \frac{-5}{60}$$

$$\frac{-2 \times 4}{15 \times 4} = \frac{-8}{60}$$

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

$$= \frac{(-5) + (-8)}{60}$$

$$= \frac{-5 - 8}{60}$$

$$= \frac{-13}{60}$$

(iv)

$$\frac{-8}{19} + \frac{-4}{57}$$

L.C.M. of the denominators 19 and 57 is 57.

Now, we will express $\frac{-8}{19}$ in the form in which *it takes* the denominator 57.

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

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

$$= \frac{-24-4}{57}$$

$$= \frac{-28}{57}$$

(v)

$$\frac{7}{9} + \frac{-3}{4} = \frac{7}{9} + \frac{-3}{4}$$

L.C.M. of the denominators 9 and 4 is 36.

Now, we will express $\frac{7}{9}$ and $\frac{-3}{4}$ in the form in which they take the denominator 36.

$$\frac{7 \times 4}{9 \times 4} = \frac{28}{36}$$

$$\frac{-3 \times 9}{4 \times 9} = \frac{-27}{36}$$

So

$$\frac{7}{9} + \frac{-3}{4} = \frac{28}{36} + \frac{-27}{36}$$

$$= \frac{28+(-27)}{36}$$

$$= \frac{28-27}{36}$$

$$= \frac{1}{36}$$

(vi)

$$\frac{5}{26} + \frac{11}{-39} = \frac{5}{26} + \frac{-11}{39}$$

L.C.M. of the denominators 26 and 39 is 78.

Now, we will express $\frac{5}{26}$ and $\frac{-11}{39}$ in the form in which they take the denominator 78.

$$\frac{5 \times 3}{26 \times 3} = \frac{15}{78}$$

$$\frac{-11 \times 2}{39 \times 2} = \frac{-22}{78}$$

So

$$\frac{5}{26} + \frac{-11}{39} = \frac{15}{78} + \frac{-22}{78}$$

$$= \frac{15-22}{78}$$

$$= \frac{-7}{78}$$

(vii)

$$\frac{-16}{9} + \frac{-5}{12}$$

L.C.M. of the denominators 9 and 12 is 36.

Now, we will express $\frac{-16}{9}$ and $\frac{-5}{12}$ in the form in which they take the denominator 36.

$$\frac{-16 \times 4}{9 \times 4} = \frac{-64}{36}$$

$$\frac{-5 \times 3}{12 \times 3} = \frac{-15}{36}$$

$$\frac{-16}{9} + \frac{-5}{12} = \frac{-64}{36} + \frac{-15}{36}$$

$$= \frac{(-64)+(-15)}{36}$$

$$= \frac{-64-15}{36}$$

$$= \frac{-79}{36}$$

(viii)

$$\frac{-13}{8} + \frac{5}{36}$$

L.C.M. of the denominators 8 and 36 is 72.

Now, we will express $\frac{-13}{8}$ and $\frac{5}{36}$ in the form in which they take the denominator 72.

$$\frac{-13 \times 9}{8 \times 9} = \frac{-117}{72}$$

$$\frac{5 \times 2}{36 \times 2} = \frac{10}{72}$$

$$\frac{-13}{8} + \frac{5}{36} = \frac{-117}{72} + \frac{10}{72}$$

$$= \frac{-117+10}{72}$$

$$= \frac{-107}{72}$$

$$\left(\text{ix} \right) 0 + \frac{-3}{5}$$

Taking *L.C.M.* of the denominator :

$$= \frac{0 \times 5 - 3}{5}$$

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

$$\left(\text{x} \right)$$

$$1 + \frac{-4}{5} = \frac{1}{1} + \frac{-4}{5}$$

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

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

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

$$\frac{1}{1} + \frac{-4}{5} = \frac{5}{5} + \frac{-4}{5}$$

$$= \frac{5-4}{5}$$

$$= \frac{1}{5}$$

***** END *****