Operations on Rational Numbers Ex 5.1 Q1

Answer :

$$\text{(i)}\ \frac{-5}{7}+\frac{3}{7}=\frac{-5+3}{7}=\frac{-2}{7}$$

$$\text{(ii)}\ \frac{-15}{4}+\frac{7}{4}=\frac{-15+7}{4}=\frac{-8}{4}=-2$$

$$\text{(iii)}\ \frac{-8}{11}+\frac{-4}{11}=\frac{-8-4}{11}=\frac{-12}{11}$$

$$\text{(iv)}\ \frac{6}{13}+\frac{-9}{13}=\frac{6-9}{13}=\frac{-3}{13}$$

Operations on Rational Numbers Ex 5.1 Q2

Answer :

(i)

$\frac{3}{4}+\frac{-3}{5}$

LCM of the denominators 4 and 5 is 20.

Now, we express $\frac{3}{4}$ and $\frac{-3}{5}$ into forms in which both of them have the same denominator 20.

$\frac{3}{4}=\frac{3\times5}{4\times5}=\frac{15}{20}$

$\frac{-3}{5}=\frac{-3\times4}{5\times4}=\frac{-12}{20}$

Therefore, $\frac{3}{4}+\frac{-3}{5}=\frac{15}{20}+\frac{-12}{20}=\frac{15-12}{20}=\frac{3}{20}$

(ii)

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

LCM of the denominators 1 and 5 is 5.

Now, we express -3 and $\frac{3}{5}$ into forms in which both of them have the same denominator 5.

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

$\frac{3}{5}=\frac{3\times1}{5\times1}=\frac{3}{5}$

Therefore, $-3+\frac{3}{5}=\frac{-15}{5}+\frac{3}{5}=\frac{-12}{5}$

(iii)

$\frac{-7}{27} + \frac{11}{18}$

LCM of the denominators 27 and 18 is 54.

Now, we express $\frac{-7}{27}$ and $\frac{11}{18}$ into forms in which both of them have the same denomiator 54.

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

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

Therefore, $\frac{-7}{27} + \frac{11}{18} = \frac{-14}{54} + \frac{33}{54} = \frac{-14+33}{54} = \frac{19}{54}$

(iv)

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

LCM of the denominators 4 and 8 is 8.

Now, we express $\frac{-31}{4}$ and $\frac{-5}{8}$ into forms in which both of them have the same denomiator 8.

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

$\frac{-5}{8} = \frac{-5\times1}{8\times1} = \frac{-5}{8}$

Therefore, $\frac{-31}{4} + \frac{-5}{8} = \frac{-62}{8} + \frac{-5}{8} = \frac{-62-5}{8} = \frac{-67}{8}$

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