

Operations on Rational Numbers Ex 5.1 Q1

Answer:

$$(i) \frac{-5}{7} + \frac{3}{7} = \frac{-5+3}{7} = \frac{-2}{7}
 (ii) \frac{-15}{4} + \frac{7}{4} = \frac{-15+7}{4} = \frac{-8}{4} = -2
 (iii) \frac{-8}{11} + \frac{-4}{11} = \frac{-8-4}{11} = \frac{-12}{11}
 (iv) \frac{6}{13} + \frac{-9}{13} = \frac{6-9}{13} = \frac{-3}{13}$$

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.

$$\begin{array}{l} \frac{3}{4} = \frac{3 \times 5}{4 \times 5} = \frac{15}{20} \\ \frac{-3}{5} = \frac{-3 \times 4}{5 \times 4} = \frac{-12}{20} \\ \text{Therefore, } \frac{3}{4} + \frac{-3}{5} = \frac{15}{20} + \frac{-12}{20} = \frac{15-12}{20} = \frac{3}{20} \end{array}$$

(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.

denominator 5.
$$\frac{-3}{1} = \frac{3 \times 5}{1 \times 5} = \frac{-15}{5}$$
$$\frac{3}{5} = \frac{3 \times 1}{5 \times 1} = \frac{3}{5}$$
Therefore, $-3 + \frac{3}{5} = \frac{-15}{5} + \frac{3}{5} = \frac{-12}{5}$

$$\frac{-7}{95} + \frac{11}{19}$$

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

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

$$\frac{11}{10} = \frac{11 \times 3}{10 \times 2} = \frac{33}{54}$$

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

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

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. $\frac{-31}{4} = \frac{-31 \times 2}{4 \times 2} = \frac{-62}{8}$ $\frac{-5}{8} = \frac{-5 \times 1}{8 \times 1} = \frac{-5}{8}$ Therefore, $\frac{-31}{4} + \frac{-5}{8} = \frac{-62}{8} + \frac{-5}{8} = \frac{-62-5}{8} = \frac{-67}{8}$

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

$$\frac{-5}{8} = \frac{-5 \times 1}{8 \times 1} = \frac{-5}{8}$$

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

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