



Exercise 1C

Q1

Answer :

$$1. \frac{-2}{5} + \frac{4}{5} = \frac{-2+4}{5} = \frac{2}{5}$$

$$2. \frac{-6}{11} + \frac{-4}{11} = \frac{-6+(-4)}{11} = \frac{-6-4}{11} = \frac{-10}{11}$$

$$3. \frac{-11}{8} + \frac{5}{8} = \frac{-11+5}{8} = \frac{-6}{8} = \frac{-3 \times 2}{4 \times 2} = \frac{-3}{4}$$

$$4. \frac{-7}{3} + \frac{1}{3} = \frac{-7+1}{3} = \frac{-6}{3} = \frac{-3 \times 2}{3} = -2$$

$$5. \frac{5}{6} + \frac{-1}{6} = \frac{5+(-1)}{6} = \frac{4}{6} = \frac{2 \times 2}{3 \times 2} = \frac{2}{3}$$

$$6. \frac{-17}{15} + \frac{-1}{15} = \frac{-17+(-1)}{15} = \frac{-17-1}{15} = \frac{-18}{15} = \frac{-6 \times 3}{5 \times 3} = \frac{-6}{5}$$

Q2

Answer :

1. The denominators of the given rational numbers are 4 and 5.

LCM of 4 and 5 is 20.

Now,

$$\frac{3}{4} = \frac{3 \times 5}{4 \times 5} = \frac{15}{20} \text{ and } \frac{-3}{5} = \frac{-3 \times 4}{5 \times 4} = \frac{-12}{20}$$

$$\therefore \frac{3}{4} + \frac{-3}{5} = \frac{15}{20} + \frac{-12}{20} = \frac{15 + (-12)}{20} = \frac{15 - 12}{20} = \frac{3}{20}$$

2. The denominators of the given rational numbers are 8 and 12.

LCM of 8 and 12 is 24.

Now,

$$\frac{5}{8} = \frac{5 \times 3}{8 \times 3} = \frac{15}{24} \text{ and } \frac{-7}{12} = \frac{-7 \times 2}{12 \times 2} = \frac{-14}{24}$$

$$\therefore \frac{5}{8} + \frac{-7}{12} = \frac{15}{24} + \frac{-14}{24} = \frac{15 + (-14)}{24} = \frac{15 - 14}{24} = \frac{1}{24}$$

3. The denominators of the given rational numbers are 9 and 6.

LCM of 9 and 6 is 18.

Now,

$$\frac{-8}{9} = \frac{-8 \times 2}{9 \times 2} = \frac{-16}{18} \text{ and } \frac{11}{6} = \frac{11 \times 3}{6 \times 3} = \frac{33}{18}$$

$$\therefore \frac{-8}{9} + \frac{11}{6} = \frac{-16}{18} + \frac{33}{18} = \frac{-16 + 33}{18} = \frac{-16 + 33}{18} = \frac{17}{18}$$

4. The denominators of the given rational numbers are 16 and 24.

LCM of 16 and 24 is 48.

Now,

$$\frac{-1}{12} = \frac{-1 \times 5}{12 \times 5} = \frac{-5}{60} \text{ and } \frac{-2}{15} = \frac{-2 \times 4}{15 \times 4} = \frac{-8}{60}$$

$$\therefore \frac{1}{-12} + \frac{2}{-15} = \frac{-5}{60} + \frac{-8}{60} = \frac{-5 + (-8)}{60} = \frac{-5-8}{60} = \frac{-13}{60}$$

7. We can write -1 as $\frac{-1}{1}$.

The denominators of the given rational numbers are 1 and 4.

LCM of 1 and 4 is 4.

Now,

$$\frac{-1}{1} = \frac{-1 \times 4}{1 \times 4} = \frac{-4}{4} \text{ and } \frac{3}{4} = \frac{3 \times 1}{4 \times 1} = \frac{3}{4}$$

$$\therefore -1 + \frac{3}{4} = \frac{-4}{4} + \frac{3}{4} = \frac{-4+3}{4} = \frac{-1}{4}$$

8. We can write 2 as $\frac{2}{1}$.

The denominators of the given rational numbers are 1 and 4.

LCM of 1 and 4 is 4.

Now,

$$\frac{2}{1} = \frac{2 \times 4}{1 \times 4} = \frac{8}{4} \text{ and } \frac{-5}{4} = \frac{-5 \times 1}{4 \times 1} = \frac{-5}{4}$$

$$\therefore 2 + \frac{(-5)}{4} = \frac{8}{4} + \frac{(-5)}{4} = \frac{8+(-5)}{4} = \frac{8-5}{4} = \frac{3}{4}$$

9. We can write 0 as $\frac{0}{1}$.

The denominators of the given rational numbers are 1 and 5.

LCM of 1 and 5 is 5, that is, (1×5) .

Now,

$$\frac{0}{1} = \frac{0 \times 5}{1 \times 5} = \frac{0}{5} = 0 \text{ and } \frac{-2}{5} = \frac{-2 \times 1}{5 \times 1} = \frac{-2}{5}$$

$$\therefore 0 + \frac{(-2)}{5} = \frac{0}{5} + \frac{(-2)}{5} = \frac{0+(-2)}{5} = \frac{0-2}{5} = \frac{-2}{5}$$

Answer :

$$1. \text{ LHS} = \frac{-12}{5} + \frac{2}{7}$$

LCM of 5 and 7 is 35.

$$\frac{-12 \times 7}{5 \times 7} + \frac{2 \times 5}{7 \times 5} = \frac{-84}{35} + \frac{10}{35} = \frac{-84 + 10}{35} = \frac{-74}{35}$$

$$\text{RHS} = \frac{2}{7} + \frac{-12}{5}$$

LCM of 5 and 7 is 35.

$$\frac{2 \times 5}{7 \times 5} + \frac{-12 \times 7}{5 \times 7} = \frac{10}{35} + \frac{-84}{35} = \frac{10 - 84}{35} = \frac{-74}{35}$$

$$\therefore \frac{-12}{5} + \frac{2}{7} = \frac{2}{7} + \frac{-12}{5}$$

$$2. \text{ LHS} = \frac{-5}{8} + \frac{-9}{13}$$

LCM of 8 and 13 is 104.

$$\frac{-5 \times 13}{8 \times 13} + \frac{-9 \times 8}{13 \times 8} = \frac{-65}{104} + \frac{-72}{104} = \frac{-65 + (-72)}{104} = \frac{-65 - 72}{104} = \frac{-137}{104}$$

$$\text{RHS} = \frac{-9}{13} + \frac{-5}{8}$$

LCM of 13 and 8 is 104.

$$\frac{-9 \times 8}{13 \times 8} + \frac{-5 \times 13}{8 \times 13} = \frac{-72}{104} + \frac{-65}{104} = \frac{-72 - 65}{104} = \frac{-137}{104}$$

$$\therefore \frac{-5}{8} + \frac{-9}{13} = \frac{-9}{13} + \frac{-5}{8}$$

$$3. \text{ LHS} = \frac{3}{1} + \frac{-7}{12}$$

LCM of 1 and 12 is 12.

$$\frac{3 \times 12}{1 \times 12} + \frac{-7 \times 1}{12 \times 1} = \frac{36}{12} + \frac{-7}{12} = \frac{36 + (-7)}{12} = \frac{36 - 7}{12} = \frac{29}{12}$$

$$\text{RHS} = \frac{-7}{12} + \frac{3}{1}$$

LCM of 12 and 1 is 12.

$$\frac{-7 \times 1}{12 \times 1} + \frac{3 \times 12}{1 \times 12} = \frac{-7}{12} + \frac{36}{12} = \frac{-7+36}{12} = \frac{29}{12}$$

$$\therefore 3 + \frac{-7}{12} = \frac{-7}{12} + 3$$

$$4. \text{ LHS} = \frac{2}{-7} + \frac{12}{-35}$$

We will write the given numbers with positive denominators.

$$\frac{2}{-7} = \frac{2 \times (-1)}{-7 \times (-1)} = \frac{-2}{7} \text{ and } \frac{12}{-35} = \frac{12 \times (-1)}{-35 \times (-1)} = \frac{-12}{35}$$

LCM of 7 and 35 is 35.

$$\frac{-2 \times 5}{7 \times 5} + \frac{-12 \times 1}{35 \times 1} = \frac{-10}{35} + \frac{-12}{35} = \frac{-10 + (-12)}{35} = \frac{-10-12}{35} = \frac{-22}{35}$$

$$\text{RHS} = \frac{12}{-35} + \frac{2}{-7}$$

We will write the given numbers with positive denominators.

$$\frac{12}{-35} = \frac{12 \times (-1)}{-35 \times (-1)} = \frac{-12}{35} \text{ and } \frac{2}{-7} = \frac{2 \times (-1)}{-7 \times (-1)} = \frac{-2}{7}$$

LCM of 35 and 7 is 35.

$$\frac{-2 \times 5}{7 \times 5} + \frac{-12 \times 1}{35 \times 1} = \frac{-10}{35} + \frac{-12}{35} = \frac{-10 + (-12)}{35} = \frac{-10-12}{35} = \frac{-22}{35}$$

$$\therefore \frac{2}{-7} + \frac{12}{-35} = \frac{-12}{35} + \frac{-2}{7}$$

***** END *****