

$$= \frac{2}{5} \times \left( -\frac{3}{7} + \frac{1}{14} \right) - \frac{1}{4} \quad \text{(By distributivity)}$$

$$= \frac{2}{5} \times \left( \frac{-3 \times 2 + 1}{14} \right) - \frac{1}{4}$$

$$= \frac{2}{5} \times \left( \frac{-5}{14} \right) - \frac{1}{4}$$

$$= -\frac{1}{7} - \frac{1}{4}$$

$$= \frac{-4 - 7}{28} = \frac{-11}{28}$$

Question 2:

Write the additive inverse of each of the following:

(i)  $\frac{2}{8}$  (ii)  $\frac{-5}{9}$  (iii)  $\frac{-6}{-5}$  (iv)  $\frac{2}{-9}$  (v)  $\frac{19}{-6}$

## Exercise 1.1

Question 1:

Using appropriate properties find:

$$(i) \quad -\frac{2}{3} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5} \times \frac{1}{6}$$

$$(ii) \quad \frac{2}{5} \times \left(-\frac{3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{14} \times \frac{2}{5}$$

Answer:

(i)

$$-\frac{2}{3} \times \frac{3}{5} + \frac{5}{2} - \frac{3}{5} \times \frac{1}{6} = -\frac{2}{3} \times \frac{3}{5} - \frac{3}{5} \times \frac{1}{6} + \frac{5}{2}$$

(Using commutativity of rational numbers)

$$= \left(-\frac{3}{5}\right) \times \left(\frac{2}{3} + \frac{1}{6}\right) + \frac{5}{2} \quad \text{(Distributivity)}$$

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

$$= \left(-\frac{3}{6}\right) + \frac{5}{2} = \left(\frac{-3 + 5 \times 3}{6}\right) = \left(\frac{-3 + 15}{6}\right)$$

$$= \frac{12}{6} = 2$$

(ii)

$$\frac{2}{5} \times \left(-\frac{3}{7}\right) - \frac{1}{6} \times \frac{3}{2} + \frac{1}{14} \times \frac{2}{5} = \frac{2}{5} \times \left(-\frac{3}{7}\right) + \frac{1}{14} \times \frac{2}{5} - \frac{1}{6} \times \frac{3}{2} \quad \text{(By commutativity)}$$