



Operations on Rational Numbers Ex 5.3 Q1

Answer :

$$(i) \quad \frac{7}{11} \times \frac{5}{4} = \frac{7 \times 5}{11 \times 4} = \frac{35}{44}$$

$$(ii) \quad \frac{5}{7} \times \frac{-3}{4} = \frac{5 \times -3}{7 \times 4} = \frac{-15}{28}$$

$$(iii) \quad \frac{-2}{9} \times \frac{5}{11} = \frac{-2 \times 5}{9 \times 11} = \frac{-10}{99}$$

$$(iv) \quad \frac{-3}{17} \times \frac{-5}{-4} = \frac{-3 \times 5}{17 \times -4} = \frac{-15}{68}$$

Operations on Rational Numbers Ex 5.3 Q2

Answer :

$$(i) \quad \frac{-5}{17} \times \frac{51}{-60} = \frac{-5}{17} \times \frac{17 \times 3}{-5 \times 3 \times 4} = \frac{1}{4}$$

$$(ii) \quad \frac{-6}{11} \times \frac{-55}{36} = \frac{-6}{11} \times \frac{-5 \times 11}{6 \times 6} = \frac{5}{6}$$

$$(iii) \quad \frac{-8}{25} \times \frac{-5}{16} = \frac{-8}{5 \times 5} \times \frac{-5}{8 \times 2} = \frac{1}{10}$$

$$(iv) \quad \frac{6}{7} \times \frac{-49}{36} = \frac{6}{7} \times \frac{-7 \times 7}{6 \times 6} = \frac{-7}{6}$$

Operations on Rational Numbers Ex 5.3 Q3

Answer :

$$(i) \quad \frac{-16}{21} \times \frac{14}{5} = \frac{-16 \times 14}{21 \times 5} = \frac{-32}{15}$$

$$(ii) \quad \frac{7}{6} \times \frac{-3}{28} = \frac{7 \times -3}{6 \times 28} = \frac{-1}{8}$$

$$(iii) \quad \frac{-19}{36} \times 16 = \frac{-19 \times 16}{36} = \frac{-76}{9}$$

$$(iv) \quad \frac{-13}{9} \times \frac{27}{-26} = \frac{-13 \times 27}{9 \times -26} = \frac{3}{2}$$

Operations on Rational Numbers Ex 5.3 Q4

Answer :

$$(i) \quad \left(-5 \times \frac{2}{15}\right) - \left(-6 \times \frac{2}{9}\right) = \left(-5 \times \frac{2}{3 \times 5}\right) - \left(-6 \times \frac{2}{3 \times 3}\right) \\ = \left(\frac{-2}{3}\right) - \left(\frac{-4}{3}\right) = \frac{-2+4}{3} = \frac{2}{3}$$

$$(ii) \quad \left(\frac{-9}{4} \times \frac{5}{3}\right) + \left(\frac{13}{2} \times \frac{5}{6}\right) = \left(\frac{-3 \times 3}{4} \times \frac{5}{3}\right) + \left(\frac{65}{12}\right) \\ = \left(\frac{-15}{4}\right) + \left(\frac{65}{12}\right) = \frac{-15 \times 3}{4 \times 3} + \frac{65}{12} = \frac{-45+65}{12} = \frac{20}{12} = \frac{5 \times 4}{3 \times 4} = \frac{5}{3}$$

Operations on Rational Numbers Ex 5.3 Q5

Answer :

$$(i) \quad \left(\frac{13}{9} \times \frac{-15}{2}\right) + \left(\frac{7}{3} \times \frac{8}{5}\right) + \left(\frac{3}{5} \times \frac{1}{2}\right) \\ = \left(\frac{13}{3 \times 3} \times \frac{-3 \times 5}{2}\right) + \left(\frac{56}{15}\right) + \left(\frac{3}{10}\right) = \frac{-65}{6} + \frac{56}{15} + \frac{3}{10} \\ = \frac{-65 \times 5}{6 \times 5} + \frac{56 \times 2}{15 \times 2} + \frac{3 \times 3}{10 \times 3} = \frac{-325}{30} + \frac{112}{30} + \frac{9}{30} = \frac{-325+112+9}{30} = \frac{-204}{30} = \frac{-34}{5}$$
$$(ii) \quad \left(\frac{3}{11} \times \frac{5}{6}\right) - \left(\frac{9}{12} \times \frac{4}{3}\right) + \left(\frac{5}{13} \times \frac{6}{15}\right) \\ = \left(\frac{3}{11} \times \frac{5}{2 \times 3}\right) - \left(\frac{3 \times 3}{4 \times 3} \times \frac{4}{3}\right) + \left(\frac{5}{13} \times \frac{3 \times 2}{5 \times 3}\right) = \frac{5}{22} - \frac{1}{1} + \frac{2}{13} \\ = \frac{5 \times 13}{22 \times 13} - \frac{1 \times 286}{1 \times 286} + \frac{2 \times 22}{13 \times 22} = \frac{65}{286} - \frac{286}{286} + \frac{44}{286} = \frac{65-286+44}{286} = \frac{-177}{286}$$

***** END *****