Rational Numbers Ex 4.5 Q1

Answer :

(i)

The standard form of $\frac{-9}{12}$ is $\frac{-9/3}{12/3} = \frac{-3}{4}$

The standard form of $\frac{8}{-12}$ is $\frac{8/-4}{-12/-4} = \frac{-2}{3}$

Since, the standard forms of two rational numbers are not same.
Hence, they are not equal.

(ii)

Since, LCM of 20 and 25 is 100.
Therefore making the denominators equal,
$\frac{-16}{20} = \frac{-16\times5}{20\times5} = \frac{-80}{100}$ and $\frac{20}{-25} = \frac{-20\times4}{25\times4} = \frac{-80}{100}$.
Therefore, $\frac{-16}{20} = \frac{20}{-25}$.

(iii)

Since, LCM of 21 and 9 is 63.
Therefore making the denominators equal,
$\frac{-7}{21} = \frac{-7\times3}{21\times3} = \frac{-21}{63}$ and $\frac{3}{-9} = \frac{-3\times7}{9\times7} = \frac{-21}{63}$.
Therefore, $\frac{-7}{21} = \frac{3}{-9}$.

(iv)

Since, LCM of 14 and 21 is 42.
Therefore making the denominators equal,
$\frac{-8}{14} = \frac{-8\times3}{14\times3} = \frac{-24}{42}$ and $\frac{13}{21} = \frac{13\times2}{21\times2} = \frac{26}{42}$.
Therefore, $\frac{-8}{14}$ is not equal to $\frac{13}{21}$.

Rational Numbers Ex 4.5 Q2

Answer :

(i) $\frac{2}{3} = \frac{5}{x}$, then $x = 5 \times \frac{3}{2} = \frac{15}{2}$

(ii) $\frac{-3}{7} = \frac{x}{4}$, then $x = \frac{-3}{7} \times 4 = \frac{-12}{7}$

(iii) $\frac{3}{5} = \frac{x}{-25}$, then $x = \frac{3}{5} \times \left(-25\right) = \frac{-75}{5} = -15$

(iv) $\frac{13}{6} = \frac{-65}{x}$, then $x = \frac{6}{13} \times \left(-65\right) = 6 \times \left(-5\right) = -30$

Rational Numbers Ex 4.5 Q3

Answer :

(i) rational number

(ii) standard rational number

(iii) standard form

(iv) $\frac{a}{b} = \frac{a \div m}{b \div m}$

(v) positive rational number, negative rational number

(vi) $\frac{-1}{1}$

(vii) zero

(viii) ratio

Rational Numbers Ex 4.5 Q4

Answer :

(i) False; not necessary

(ii) True; every integer can be expressed in the form of p/q, where q is not zero.

(iii) False; not necessary

(iv) True; every fraction can be expressed in the form of p/q, where q is not zero.

(v) False; not necessary

(vi) True

(vii) False; they can be equal, when simplified further.

(viii) False

(ix) False

(x) True; in the standard form, they are equal.

********** END **********