



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,

$$\frac{-16}{20} = \frac{-16 \times 5}{20 \times 5} = \frac{-80}{100} \text{ and } \frac{20}{-25} = \frac{-20 \times 4}{25 \times 4} = \frac{-80}{100} .$$

Therefore, $\frac{-16}{20} = \frac{20}{-25}$.

(iii)

Since, LCM of 21 and 9 is 63.

Therefore making the denominators equal,

$$\frac{-7}{21} = \frac{-7 \times 3}{21 \times 3} = \frac{-21}{63} \text{ and } \frac{3}{-9} = \frac{-3 \times 7}{9 \times 7} = \frac{-21}{63} .$$

Therefore, $\frac{-7}{21} = \frac{3}{-9}$.

(iv)

Since, LCM of 14 and 21 is 42.

Therefore making the denominators equal,

$$\frac{-8}{14} = \frac{-8 \times 3}{14 \times 3} = \frac{-24}{42} \text{ and } \frac{13}{21} = \frac{13 \times 2}{21 \times 2} = \frac{26}{42} .$$

Therefore, $\frac{-8}{14}$ is not equal to $\frac{13}{21}$.

Rational Numbers Ex 4.5 Q2

Answer :

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

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

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

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

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 *****