

RD SHARMA

Solutions

Class 7 Maths

Chapter 4

Ex 4.5

Q 1. Which of the following numbers are equal ?

(i) . $-9/12$ and $8/-12$

(ii) . $-16/20$ and $20/-25$

(iii) . $-7/21$ and $3/-9$

(iv) . $-8/-14$ and $13/21$

SOLUTION :

(i) . The standard form of $-9/12$ is $-9/3$, $12/3 = -34$

The standard form of $8/-12$ is $8/-4$, $12/-4 = -2/3$

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 , $-16/20 = (-16 \times 5)/(20 \times 5) = -80/100$ and $20/-25 = (-20 \times 4)/(25 \times 4) = -80/100$.

Therefore , $-16/20 = 20/-25$.

(iii) . Since , LCM of 21 and 9 is 63 .

Therefore making the denominators equal , $-7/21 = (-7 \times 3)/(21 \times 3) = -21/63$ and $3/-9 = (-3 \times 7)/(9 \times 7) = -21/63$.

Therefore , $-7/21 = 3/-9$.

(iv) . Since , LCM of 14 and 21 is 42 .

Therefore making the denominators equal , $-8/-14 = (-8 \times 3)/(-14 \times 3) = -24/-42$ and $13/21 = (13 \times 2)/(21 \times 2) = 26/42$.

Therefore , $-8/14$ is not equal to $13/21$.

Q 2 . If each of the following pairs represents a pair of equivalent rational numbers , find the values of x :

(i) . $2/3$ and $5/x$

(ii) . $-3/7$ and $x/4$

(iii) . $3/5$ and $x/-25$

(iv) . $13/6$ and $-65/x$

SOLUTION :

(i) . $2/3 = 5/x$, then $x = 5 \times 3/2 = 15/2$

(ii) . $-3/7 = x/4$, then $x = -3/7 \times 4 = -12/7$

(iii) . $3/5 = x/-25$, then $x = 3/5 \times (-25) = -75/5 = -15$

(iv) . $13/6 = -65/x$, then $x = 6/13 \times (-65) = 6 \times (-5) = -30$

Q 3 . In each of the following , fill in the blanks so as to make the statement true:

(i) . A number which can be expressed in the form p/q , where p and q are integers and q is not equal to zero , is called a

(ii) . If the integers p and q have no common divisor other than 1 and q is positive , then the rational number p/q is said to be in the

(iii) . Two rational numbers are said to be equal , if they have the same form .

(iv) . If m is a common divisor of a and b , then $\frac{a}{b} = \frac{a \div m}{b \div m}$

(v) . If p and q are positive Integers , then p/q is arational number and $p/-q$ is a rational number .

(vi) . The standard form of -1 is ...

(vii) . If p/q is a rational number , then q cannot be

(viii) . Two rational numbers with different numerators are equal , if their numerators are in the same as their denominators .

SOLUTION :

(i) . rational number

(ii) . standard rational number

(iii) . standard form

(iv) . $a/b = (a \div m)/(b \div m)$

(v) . positive rational number , negative rational number

(vi) . $-1/1$

(vii). Zero

(viii). ratio

Q 4. In each of the following state if the statement is true (T) or false (F) :

(i) . The quotient of two integers is always an integer .

(ii) . Every integer is a rational number .

(iii) . Every rational number is an integer .

(iv) . Every fraction is a rational number .

(v) . Every rational number is a fraction .

(vi) . If a/b is a rational number and m any integer , then $\frac{a}{b} = \frac{a \times m}{b \times m}$.

(vii) . Two rational numbers with different numerators cannot be equal .

(viii) . 8 can be written as a rational number with any integer as denominator .

(ix) . 8 can be written as a rational number with any integer as numerator .

(x) . $2/3$ is equal to $4/6$.

SOLUTION :

(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 .