

NCERT Solutions for Class 9 Maths Chapter 1 Number Systems Ex

1.1

Question 1.

Is zero a rational number? Can you write it in the form p/q , where p and q are integers and $q \neq 0$?

Solution.

Yes, zero is a rational number it can be written in the form p/q .

$0 = 0/1 = 0/2 = 0/3$ etc. denominator q can also be taken as negative integer.

Questions 2.

Find six rational numbers between 3 and 4.

Solution.

There are infinite rational numbers between 3 and 4.

As we have to find 6 rational numbers between 3 and 4, we will multiply both the numbers, 3 and 4, with $6+1 = 7$ (or any number greater than 6)

i.e., $3 \times (7/7) = 21/7$

and, $4 \times (7/7) = 28/7$. The numbers in between $21/7$ and $28/7$ will be rational and will fall between 3 and 4.

Hence, $22/7, 23/7, 24/7, 25/7, 26/7, 27/7$ are the 6 rational numbers between 3 and 4.

Question 3.

Find five rational numbers between $3/5$ and $4/5$.

Solution.

Since, we need to find five rational numbers, therefore, multiply numerator and denominator by 6.

i.e., $(3/5) \times (6/6) = 18/30$

and, $(4/5) \times (6/6) = 24/30$

The numbers in between $18/30$ and $24/30$ will be rational and will fall between $3/5$ and $4/5$.

Hence, $19/30, 20/30, 21/30, 22/30, 23/30$ are the 5 rational numbers between $3/5$ and $4/5$

Question 4.

State whether the following statements are true or false. Give reasons for your answers.

(i) Every natural number is a whole number.

(ii) Every integer is a whole number.

(iii) Every rational number is a whole number.

Solution.

(i) True

∵ The collection of all natural numbers and 0 is called whole numbers.

(ii) False

∵ Negative integers are not whole numbers.

(iii) False

∵ Rational numbers are of the form p/q , $q \neq 0$ and q does not divide p completely that are not whole numbers.