

# Number system Exercise 1

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## 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 as it can be represented as  $0/1$  or  $0/2$ ...

## Question 2

Find six rational numbers between 3 and 4.

### Solution

The six rational numbers

3.1, 3.2, 3.3, 3.4, 3.5, 3.6

## Question 3

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

### Solution:

We need to find five rational numbers

So we multiply the denominator and numerator by  $(5+1)$  both the numbers

$$3/5 = 18/30$$

$$4/5 = 24/30$$

So rational numbers will be in increasing order

$$19/30$$

$$20/30$$

$$21/30$$

$$22/30$$

$$23/30$$

## 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; since the collection of whole numbers contains all natural numbers.
- (ii) False; as integers may be negative but whole numbers are positive. For example:  $-3$  is an integer but not a whole number.
- (iii) False; as rational numbers may be fractional but whole numbers may not be

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