Number system Exercise 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 ≠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

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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