



[Frequently Asked Questions]

Number System & Set Theory

Subject:	Business Economics
Course:	B. A. (Hons.), 1st Semester, Undergraduate
Paper No. & Title:	Paper – 202 Mathematics for Business Economics
Unit No. & Title:	Unit – 1 Basic Concepts
Lecture No. & Title:	Lecture – 1 Number System & Set Theory

Frequently Asked Questions

**Q1.Are there numbers other than the Rational Numbers?
That is in other words: Are there numbers other than the
numbers of the type $\frac{p}{q}$?**

A1: Yes there are many numbers that are not rational numbers
e.g. $\sqrt{2}$, π , e .

Q2.Can we divide any number by any other number?

A2. No. One cannot divide any number by zero.

**Q3.What is the right hierarchy of different types of
numbers?**

A3. $\mathbb{N} \subseteq \mathbb{Z} \subseteq \mathbb{Q} \subseteq \mathbb{R} \subseteq \mathbb{C}$

**Q4.What is one of the main advantages of introducing
complex numbers?**

A4. Even negative numbers have square-roots in Complex
numbers.

Q5.What is the main use of Venn Diagrams?

A5. The main use of Venn Diagrams is to verify the validity of
results about sets.

**Q6.The statement defined for all natural numbers is
proved if we check its validity for about 10 cases?**

A6.No. Even checking the validity; for 1000 cases or for that
matter for any large number that we may have in mind; is not
sufficient for proving the validity of the statement.

Q7.Is the universal set unique?

A7.No. Universal set of each situation is different. But for particular discussion it remains the same.

Q8.Suppose A and B are two sets. When do you say that A is not a subset of B ?

A8.When there is at least one element say x in A which is not in set B , we say that A is not a subset of B .

Q9.Is the sum of two rational numbers a rational number?

A9.Yes. Just take the sum two rational numbers, take the Least Common Multiple of the denominators and simplify, we get a rational number.

Q10.Is the sum of two irrational numbers an irrational number?

A10.May not be. e.g. $-\sqrt{2} + \sqrt{2} = 0$