Set Theory

1.1 Introduction

1.2 Sets

1.3 Sub-sets

1.4 The order of sets: finite and infinite sets .

1.5 Union and intersection of sets

1.6 Differences and complements

1.7 Venn diagrams

1.8 Logic analysis

Union and intersection of sets

- The **union** of two sets A and B is a set containing all the elements in either A or B (or both) i.e.

$$A \cup B = x/x \in A \text{ or } x \in B.$$

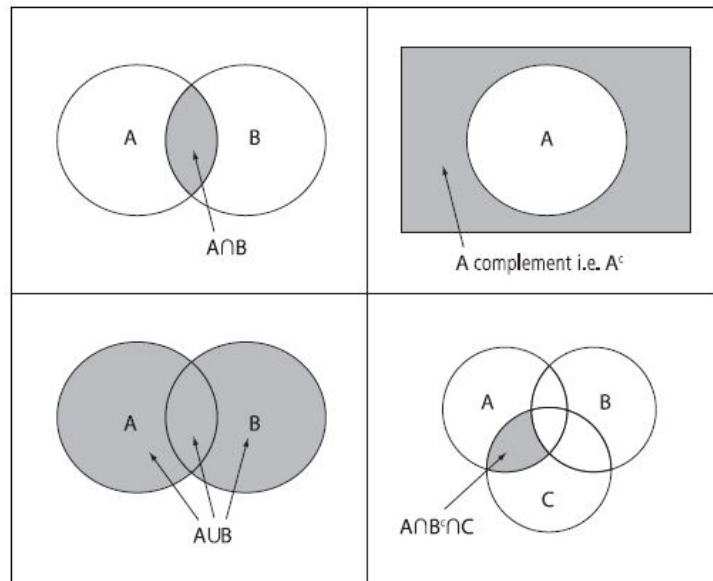- The **intersection** of two sets A and B is a set containing all the elements that are both in A and B i.e.

$$A \cap B = x/x \in A \text{ and } x \in B$$

.

- If sets A and B have no elements in common, i.e. $A \cap B = \emptyset$, then A and B are termed **disjoint sets**.

Subsets

- Proper Subsets

The Power Set

Venn Diagrams