

Set Theory

1.1 Introduction

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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

IMAGE