Sets

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Introduction to Discrete Mathematics
Sections 1.6 – 1.7 of Rosen

Introduction I

We've already implicitly dealt with sets (integers, $\mathbb{Z}$; rationals ($\mathbb{Q}$) etc.) but here we will develop more fully the definitions, properties and operations of sets.

Definition

A *set* is an unordered collection of (unique) objects.

Sets are fundamental discrete structures that form the basis of more complex discrete structures like graphs.

Contrast this definition with the one in the book (compare *bag, multi-set, tuples*, etc).

Introduction II

Definition

The objects in a set are called *elements* or *members* of a set. A set is said to *contain* its elements.

Recall the notation: for a set A, an element x we write

$$x \in A$$

if A contains x and

$$x \notin A$$

otherwise.

Latex notation: \in, \neg\in.