

Sets

Notation

{ } denote the beginning and end of a set

Elements or members are listed between the { }

e.g., {0,2,4,6}

{ x | x is an even whole number less than or equal to 6 }

= the set of all x such that x is an even whole number less than or equal to 6

\in means “is a member of”

$2 \in \{1,2,3,4\}$ means 2 is a member of the set {1,2,3,4}

\emptyset denotes the empty or null set, the set with no members

Operations

$\mathbf{A} \cup \mathbf{B}$ indicates the union of set \mathbf{A} and set \mathbf{B} . Every element of $\mathbf{A} \cup \mathbf{B}$ is a member of set \mathbf{A} or a member of set \mathbf{B} . To form $\mathbf{A} \cup \mathbf{B}$ list all elements of both sets together without writing an element more than once.

$\mathbf{A} \cap \mathbf{B}$ indicates the intersection of set \mathbf{A} and set \mathbf{B} . Every element of $\mathbf{A} \cap \mathbf{B}$ is a member of both set \mathbf{A} and set \mathbf{B} . To form $\mathbf{A} \cap \mathbf{B}$ list those elements which are in both sets.

\mathbf{A} or $\tilde{\mathbf{A}}$ indicates the complement of set \mathbf{A} and contains all elements of the universal set which are not in set \mathbf{A} .