$$A \times B = \{(a,b) \mid a \in A \text{ and } b \in B\}$$

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

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

$$A - B = \{x \mid x \in A \text{ and } x \notin B\}$$

$$A^c = \overline{A} = \{x \mid x \notin A\}$$ *

* ≡ subject to interpretation

"$A \subseteq B$" means "if $x \in A$ then $x \in B$"

"$A = B$" means "$A \subseteq B$ and $B \subseteq A$"

$$\mathcal{P}(A) = \{B \mid B \text{ is a subset of } A\}$$

$|A|$ = The "number" of elements in A *