SETS VS. LOGIC

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For all sets A, B, C in the universe U:		For all statements P, Q, R:
$A \cap B$		$P \wedge Q$
$A \cup B$		$P \vee Q$
$\overline{A}$		$\sim P$
$A \subseteq B$		$P \Rightarrow Q$
$A \cap (B \cap C) = (A \cap B) \cap C$ $A \cup (B \cup C) = (A \cup B) \cup C$	associative laws	$P \wedge (Q \wedge R) = (P \wedge Q) \wedge R$ $P \vee (Q \vee R) = (P \vee Q) \vee R$
$A \cap B = B \cap A$ $A \cup B = B \cup A$	commutative laws	$P \wedge Q = Q \wedge P$ $P \vee Q = Q \vee P$
$A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$ $A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$	distributive laws	$P \wedge (Q \vee R) = (P \wedge Q) \vee (P \wedge R)$ $P \vee (Q \wedge R) = (P \vee Q) \wedge (P \vee R)$
$\overline{\overline{A}} = A$ $A \cap \overline{A} = \emptyset$ $A \cup \overline{A} = U$		$\sim (\sim P) = P$ $P \wedge \sim P = F$ $P \vee \sim P = T$
$\overline{A \cap B} = \overline{A} \cup \overline{B}$ $\overline{A \cup B} = \overline{A} \cap \overline{B}$	de Morgan's laws	$\sim (P \wedge Q) = \sim P \vee \sim Q$ $\sim (P \vee Q) = \sim P \wedge \sim Q$
$A \subseteq B$ iff $\overline{B} \subseteq \overline{A}$	contrapositive law	$P \Rightarrow Q \ = \sim Q \Rightarrow \sim P$

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