Set Theory Identities

- ⇨ Sets: A, B, C
- ⇨ Universal Set: I
- ⇨ Complement: A'
- ⇨ Proper Subset: $A \subset B$
- ⇨ Empty Set: $\emptyset$
- ⇨ Union of Sets: $A \cup B$
- ⇨ Intersection of Sets: $A \cap B$
- ⇨ Difference of Set: $A\backslash B$

Set Theory Formulas

- ⇨ $A \subset I$
- ⇨ $A \subset A$
- ⇨ $A=B$ if $A \subset B$ and $B \subset A$
- ⇨ Empty Set: $\emptyset \subset A$
- ⇨ Union of Sets: $C = A \cup B = \{X|X \in A \text{ or } X \in B\}$
- ⇨ Union of Commutative Sets: $A \cup B=B \cup A$
- ⇨ Union of Associativity Sets: $A \cup (B \cup C)=(A \cup B) \cup C$
- ⇨ Intersection of Sets: $C = A \cap B = \{X|X \in A \text{ or } X \in B\}$
- ⇨ Intersection of Commutative Sets: $A \cap B=B \cap A$
- ⇨ Intersection of Associativity Sets: $A \cap (B \cap C)=(A \cap B) \cap C$
- ⇨ Distributive: $A \cup (B \cap C)=(A \cup B) \cap (A \cup C)$ and $A \cap (B \cup C)=(A \cap B) \cup (A \cap C)$
- ⇨ Idempotency: $A \cup A=A$, $A \cup A=A$
- ⇨ Domination: $A \cap \emptyset=\emptyset$, $A \cup I=I$
- ⇨ Identity: $A \cup \emptyset=A$, $A \cap I=A$

- ⇨ Complement = A'= {X∈I|X∉A}
- ⇨ Complement of intersection and Union: A∪A'=I, A∩A'=∅
- ⇨ De Morgan's Law: (A∪B)'=A'∩B', (A∩B)'=A'∪B'
- ⇨ Difference Sets: C = B\A = {X|X∈B or X∉A}
- ⇨ B\A = B\(A∩B)
- ⇨ B\A = B∩A'
- ⇨ A\A = ∅
- ⇨ A\B = A if A∩B = ∅
- ⇨ (A\B)∩C=(A∩C)\(B∩C)
- ⇨ A' = I\A
- ⇨ Cartesian Product : C = A X B = {(x,y)| X∈A and y∈B}