		Identity
		$A \cap U = A$ $A \cup \emptyset = A$
TABLE 2 Some Useful Summation Formulae.		$\begin{aligned} A \cup U &= U \\ A \cap \emptyset &= \emptyset \end{aligned}$
Sum	Closed Form	$A \cup A = A$ $A \cap A = A$
$\sum_{k=1}^{n} ar^{k} \ (r \neq 0)$	$\frac{ar^{n+1}-a}{r-1}, r \neq 1$	$\overline{(\overline{A})} = A$
$\sum_{k=0}^{n} k$	/ - 1	$A \cup B = B \cup A$ $A \cap B = B \cap A$
k = 1	$\frac{n(n+1)}{2}$	$A \cup (B \cup C) = (A \cup B) \cup C$ $A \cap (B \cap C) = (A \cap B) \cap C$
$\sum_{\substack{k=1\\n}} k^2$	$\frac{n(n+1)(2n+1)}{6}$	$A \cup (B \cap C) = (A \cup B) \cap (A \cup A)$ $A \cap (B \cup C) = (A \cap B) \cup (A \cap A)$
$\sum_{k=1}^{n} k^3$	$\frac{n^2(n+1)^2}{4}$	$\overline{A \cap B} = \overline{A} \cup \overline{B}$ $\overline{A \cup B} = \overline{A} \cap \overline{B}$
$\sum_{k=0}^{\infty} x^k, x < 1$	$\frac{1}{1-x}$	$A \cup (A \cap B) = A$ $A \cap (A \cup B) = A$
$\sum_{k=1}^{\infty} k x^{k-1}, x < 1$	$\frac{1}{(1-x)^2}$	$A \cup \overline{A} = U$ $A \cap \overline{A} = \emptyset$

TABLE 1 Set Identities.		
Identity	Name	
$A \cap U = A$ $A \cup \emptyset = A$	Identity laws	
$A \cup U = U$ $A \cap \emptyset = \emptyset$	Domination laws	
$A \cup A = A$ $A \cap A = A$	Idempotent laws	
$\overline{(\overline{A})} = A$	Complementation law	
$A \cup B = B \cup A$ $A \cap B = B \cap A$	Commutative laws	
$A \cup (B \cup C) = (A \cup B) \cup C$ $A \cap (B \cap C) = (A \cap B) \cap C$	Associative laws	
$A \cup (B \cap C) = (A \cup B) \cap (A \cup C)$ $A \cap (B \cup C) = (A \cap B) \cup (A \cap C)$	Distributive laws	
$\overline{\overrightarrow{A \cap B}} = \overline{A} \cup \overline{B}$ $\overline{A \cup B} = \overline{A} \cap \overline{B}$	De Morgan's laws	
$A \cup (A \cap B) = A$ $A \cap (A \cup B) = A$	Absorption laws	
$A \cup \overline{A} = U$ $A \cap \overline{A} = \emptyset$	Complement laws	