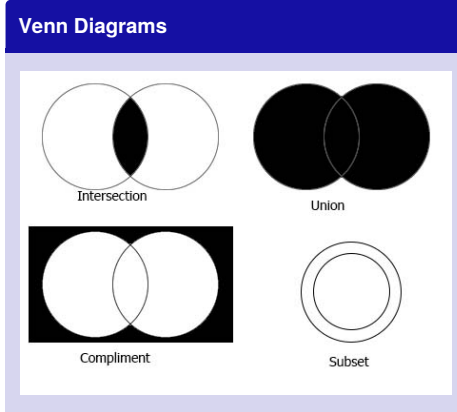


Sets	
\in	"Is an element of..."
\cup	Union: combine elements of A and B
\cap	Intersection: elements that appear in both sets
$\not\subseteq$	Is not a subset of
\subseteq	Subset: all elements in A are in B
\subset	Proper Subset: A is a proper subset of B iff A is a subset of B and B is not equal to A
\emptyset	Empty set
$\{\}$	Empty set
$\{\neq\}$	Not an empty set
\bar{A}	Compliment: the set consisting of all element in U that are not in A
Set builder notation	{formula for elements restrictions}



Conjunction		
p	q	$p \wedge q$
T	T	T
T	F	F
F	T	F
F	F	F

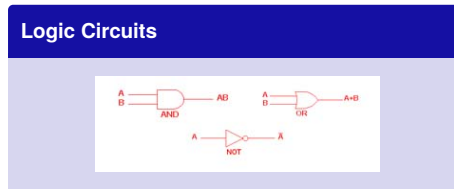
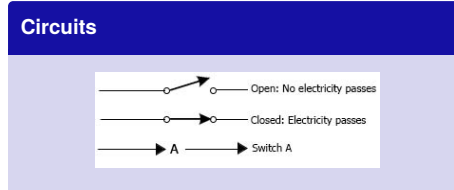
Disjunction		
p	q	$p \vee q$
T	T	T
T	F	T
F	T	T
F	F	F

Negation	
p	$\sim p$
T	F
F	T

Other Statements

NAND	Not And: Negation of And
NOR	Not Or: Negation of OR
EOR	Exclusive Or: exactly one of p and q is true
Conditional Statement \rightarrow	If p then q
Biconditional Statement \leftrightarrow	p iff (if and only if) q

Boolean Tables			
A	B	$A + B$	$A \times B$
1	1	1	1
1	0	1	0
0	1	1	0
0	0	0	0



Probability/Stats	
Perms	$P(n,r) = n!/((n-r)!)$
Combs	$C(n,r) = n!/(n-r)!r!$
Sample Space	Set of all possible outcomes
Mean	Sum of set divided by length of set
Median	Middle term of an organized
	Take the average of two terms if there is more than one middle term
Mode	The number that occurs most in a set
σ^2 (Variance)	Calculate the mean For each number, subtract the mean and square the result Calculate the average of the squared differences, or sum up the squared differences and divide by N, the number of values.
σ (Standard Deviation)	Square Root of Variance (σ^2)

Probability Formulas

b= Binomial Probability	$b(x; n, P) = nCx P^x (1 - P)^{n-x}$
n=	number of trials
x=	number of successes
P=	probability of success
Binomial Distribution	$\mu = n \cdot P$
	$\sigma^2 = n \cdot P \cdot (1-P)$



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