THE CONDITIONAL STATEMENT AND RELATED CONDITIONALS

A Conditional statement is one of the form

If p, then q.

p is called the Hypothesis and q is the Conclusion.

In Symbols: $p \to q$ means "If p, then q".

"If p, then q" asserts "In every situation in which p is true, q is also true by coincidence."

"If p, then q" asserts "It never happens that p is true and q is false."

There is no assertion that the truth of p causes q to be true. It only asserts coincidence.

The Truth Table of If p, Then q:

p	q	$p \to q$	
T	T	T	
T	F	F	
F	T	T	(Not Applicable)
F	F	T	(Not Applicable)

Related Conditionals

Given a particular conditional statement
$p \to q$ (The ORIGINAL COND'L),

There are three (3) other conditional statements related to the Original $p \to q$.

Its Converse: $q \to p$

Its Inverse: $\sim p \to \sim q$

Its Contrapositive: $\sim q \to \sim p$.

$(p \to q) \neq (q \to p)$, but $(p \to q) \equiv (\sim q \to \sim p)$,
that is, An Original Conditional Statement IS EQUIVALENT TO its Contrapositive!

p	q	$p \to q$	$q \to p$	$\sim p$	$\sim q$	$\sim p \to \sim q$	$\sim q \to \sim p$	$p \wedge \sim q$
T	T	T	T	F	F	T	T	F
T	F	F	T	F	T	T	F	T
F	T	T	F	T	F	F	T	F
F	F	T	T	T	T	T	T	F

↑ The ORIGINAL Conditional

↑ The Converse

↑ The Inverse

↑ The Contra-Positive

↑ The Negation of $p \to q$

The Tables show that:

(1) $p \to q \equiv \sim q \to \sim p$, (2) $q \to p \equiv \sim p \to \sim q$, (3) The Negation has NO "IF".

(3) $\sim(p \to q) \equiv p$ AND NOT q.