

## Expanded if-then tables

The only time a conditional is false is when a True  $\rightarrow$  False; all other times the conditional statement is true.

Let's make a truth table for some other "if, then" statements.

$p$	$q$	$\sim p$	$\sim q$	Implication $p \rightarrow q$	Converse $q \rightarrow p$	Inverse $\sim p \rightarrow \sim q$	Contrapositive $\sim q \rightarrow \sim p$
T	T	F	F	T	T	T	T
T	F	F	T	F	T	T	F
F	T	T	F	T	F	F	T
F	F	T	T	T	T	T	T

*Do you see any equivalent statements? In other words, do any have the same truth values?*