

Logically Equivalent



Two statements with the same truth-values in the same order for all the possible combinations of input values

The **Conditional** statement

$$p \rightarrow q$$

Read: If p, then q or p implies q
False when T $\rightarrow$ F; otherwise, T

The **Inverse** of the conditional statement

$$\sim p \rightarrow \sim q$$

Not logically equivalent to the conditional statement
Logically equivalent to the converse of the conditional; since they are contrapositives of each other.

The **Converse** of the conditional statement

$$q \rightarrow p$$

Not logically equivalent to the conditional statement
Logically equivalent to the inverse of the conditional; since they are contrapositives of each other.

The **Contrapositive** of the conditional statement

$$\sim q \rightarrow \sim p$$

Logically equivalent to the conditional statement