Proof by Contradiction: Assume $p \wedge \neg q$ (or simply $\neg q$) and derive a contradiction F. (For example, derive q.) In contradiction we do reverse.

Biconditional Statements

- To prove a theorem that is a biconditional statement of the form $p \leftrightarrow q$, we show that $p \rightarrow q$ and $q \rightarrow p$ are both true.
- Sometimes iff is used as an abbreviation for "if and only if," as an integer n is odd iff n^2 is odd."

$$p \leftrightarrow q \equiv (p \rightarrow q) \wedge (q \rightarrow p)$$