

Necessary and Sufficient Conditions

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The symbol \Rightarrow means implies.

It helps us to write arguments in a logical and step by step fashion. We can write it in one of three ways:

- $A \Rightarrow B$ A implies B - A is a sufficient condition for B
- $A \Leftarrow B$ B implies A - A is a necessary condition for B
- $A \iff B$ A and B imply each other - Necessary and Sufficient.

Converse Statements

The word converse is used to talk about a statement with the implication sign switched. For a triangle ABC:

Angle $ABC = 90 \text{ deg} \Rightarrow AB^2 + BC^2 = AC^2$

and

$AB^2 + BC^2 = AC^2 \Rightarrow ABC = 90 \text{ deg}$