**Modus Ponens**

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| The principle that whenever a conditional statement and its antecedent are given to be true its consequent may be validly inferred, as in: **“*if it's Tuesday this must be Belgium* and *it's Tuesday so this must be Belgium”***  **Modus Tollens**  The principle that whenever a conditional statement and the negation of its consequent are given to be true, the negation of its antecedent may be validly inferred, as in: **“*if it's Tuesday this must be Belgium* and *this isn't Belgium so it's not Tuesday.’*** |
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**Disjunctive Syllogism**

Disjunctive syllogism is a valid [rule of inference](http://en.wikipedia.org/wiki/Rule_of_inference). If we are told that at least one of two statements is true; and also told that it is not the former that is true; we can [infer](http://en.wikipedia.org/wiki/Inference) that it has to be the latter that is true.

Logical reasoning is the process which uses arguments, statements, premises and axioms to define weather a statement is true or false, resulting in a logical or illogical reasoning. In today’s logical reasoning three different types of reasoning can be distinguished, known as deductive reasoning, inductive reasoning and adductive reasoning based on respectively deduction, induction and abduction.

**General Rule (Deductive Reasoning)**

Deductive reasoning originates from the philosophy and mathematics and is the most obvious form of reasoning. Deduction is a method for applying a general rule (major premise) in specific situations (minor premise) of which conclusions can be drawn. *Example*:

**Major premise:** All humans are mortal  
**Minor premise:** Socrates is human  
**Conclusion:** Socrates is mortal

Immediately the obviousness and straightforwardness of the conclusion can be drawn from the premises above of the example of deductive reasoning. Notice that deductive reasoning no new information provides, it only rearranges information what is already known into a new statement or conclusion.