

Deductive Reasoning

Examples & Non-Examples

Example	Example	Non-Example
1. All angles in a triangle add up to 180°. 2. Two angles in a triangle are 50° and 60°. 3. Therefore, the third angle must be 70°.	1. All birds have feathers. (general fact) 2. A parrot is a bird. (specific case) 3. Therefore, a parrot has feathers. (logical conclusion)	1. My last three math tests were easy. 2. Therefore, all math tests will be easy. Just because the other tests were easy does not for sure mean all math tests will be easy.

Definition

Deductive reasoning is the process of using logical steps, definitions, properties, postulates, and theorems to draw conclusions from given facts or statements.

Deductive reasoning is the process of reasoning from known facts, definitions, and accepted properties to reach a logical conclusion.

Key Characteristics:

- It starts with general principles or known truths.
- It uses logical steps to arrive at specific conclusions.
- It is the basis for geometric proofs.

Example:

If we know:

1. All angles in a triangle add up to 180° (a known theorem),
2. Two angles in a triangle are 50° and 60° ,

Then using deductive reasoning, we conclude:

- The third angle must be 70° .

Deductive reasoning ensures that conclusions are logically valid and universally true when based on correct premises.

