

LOGICAL REASONING

Categorical Proposition & Categorical Syllogism

Standard Categorical Propositions:

All cats are dogs (A)

No cats are dogs (E)

Some cats are dogs (I)

Some cats are not dogs (O)

(Note: These 4 statements are indicated by letters A, E, I and O).

SUBJECT AND PREDICATE:

SUBJECT: The first term of any standard categorical statement is known as Subject.

PREDICATE: The second term of standard categorical statement is known as Predicate.

Eg: All juices are sweet. (Subject: juices and Predicate: sweet)

No tables are cables. (Subject: tables and Predicate: cables)

Quantity and Quality of Categorical Propositions:

Quantity: Universal (All) or Particular (Some)

Quality: Affirmative (+ve) or Negative (-ve)

All or Some in the proposition represents the **quantity**, at the same time **Affirmative or Negative** represents the **quality**.

Categorical Syllogism:

A categorical syllogism is an argument consisting of exactly **three categorical propositions** (two premises and one conclusion) in which there appear a total of exactly three categorical terms, each of which is used exactly twice.

Example 1:

Premises:

All bats are wood

Some wood are strong

Conclusion:

Some strong are bats

Example 2:

Premises:

Some cars are small

No cars are huge

Conclusion:

Some small are not huge

MAJOR AND MINOR TERMS:

In a categorical syllogism,

MINOR TERM: Subject term of the conclusion is known as the MINOR term.

MAJOR TERM: Predicate of the conclusion is known as MAJOR term.

MIDDLE TERM: The term does not appear in the conclusion is known as MIDDLE term.

Example:

Premises:

All bats are wood

Some wood are strong

Conclusion:

Some strong are bats

In the above example,

Minor Term (Subject of the conclusion) is strong.

Major Term (Predicate of the conclusion) is bats.

Middle Term is wood.

STANDARD FORM CATEGORICAL SYLLOGISM:

A categorical syllogism in STANDARD FORM always begins with the major premise, then minor premise, followed by the conclusion.

In other words, major premise first, minor premise second and conclusion at the end.

Example 1:

Premises:

No streams are lakes

Some brooks are streams

Conclusion:

Some brooks are lakes

(Note: Major term is 'lakes' appear in first premise and minor term 'brooks' appear in second premise. Middle term 'streams' does not appear in the conclusion)

Example 2:

Premises:

All bats are wood

Some wood are strong

Conclusion:

Some strong are bats

(Note: Major term is 'bats' appear in first premise and minor term 'strong' appear in second premise.)

Ref: Lumen: Introduction to philosophy.

<https://courses.lumenlearning.com/atd-epcc-introtophilosophy/chapter/categorical-syllogisms/>
