Arguments & Syllogisms
Come Let Us Reason Together: Learning To Love God With All Thy Mind
7/20/25

Components of Arguments

- Having completed the lessons on _____ and _____, we now begin the study of formal logic by considering logical arguments.
- For many an argument = _____.
- Not so in logic.
- In _____, an argument is simply a set of statements, one of which appears to be implied or supported by the others.
- There are two types of statements in an argument.
    - _____
    - _____— "the point of terminus of the argument, the statement that appears to be implied or supported by the others [i.e., the premises]."
- The premises are those statements that _____ the conclusion.

Components of Arguments

- An argument will never contain more than _____. It can contain more than one _____.
- When you hear words like _____, _____, _____, and _____, there is reason to believe that you are about to hear the conclusion of an argument.
- Common words that indicate premises are _____, _____, ____, and _____.
- The following is an example of a formal argument, written in informal language.
    - The Bible is the Word of God, and the book of Jonah is definitely in the Bible. We must therefore conclude that the book of Jonah is the Word of God.
- There are two premises here. The first is that the Bible is the Word of God. The second is that the book of Jonah is in the Bible. The conclusion which follows is that the book of Jonah is the Word of God.

Examples of Arguments

- Consider an example of a similar form that does not follow from the premises.
    - The Bible is the Word of God, and the Book of Mormon is definitely not in the Bible. We must therefore conclude that the Book of Mormon is not the Word of God.
- What is wrong with this argument?
- Just because you agree with the conclusion (_____) does not mean the argument is a good one.
- The question is not whether the conclusion is _____, but whether it _____. In this case it does not.

- The premises contain no information about whether the Bible is _____. If the premise had said the Bible was the sole Word of God, then the conclusion would have been warranted.

Examples of Arguments

- Can you spot the error in the following argument?
    - Given that the *Iliad* was written by Homer, and that the *Odyssey* is definitely not the *Iliad*, we must therefore conclude that Homer did not write the *Odyssey*.
- What is the problem?
- For the conclusion to follow, the premises would need to tell us that the *Iliad* was the _____ _____ that Homer ever wrote.

Practice

- Underline the conclusion in each of the following arguments.
    - All theology is a study of infinity, so all calculus problems are theology, because all calculus problems are a study of infinity.
    - Some pagans are idolaters, because no pagans are Christian, and no Christians are idolaters.
    - No street legal vehicles are stock cars. Thus, no racing car is street legal, since all stock cars are racing cars.
    - Some conclusions are not easily located statements, for all easily located statements are sentences at the end of arguments, and some sentences at the end of arguments are not conclusions.

The Syllogism

- The _____ is a particular form for organizing categorical statements into an argument.
- A categorial syllogism is made up of three categorical statements. The first two statements are the premises, and the last is the conclusion.
- What follows is an example of a syllogism.
    - All red plants are living things.
    - All roses are red plants.
    - Therefore, all roses are living things.
- If we abbreviate, our syllogism looks like this (note that the symbol _____ means *therefore*):
    - All M are P
    - All S are M
    - $\therefore$ All S are P

The Syllogism

- All syllogism contain three terms. The terms in the above syllogism are *S*, *P*, and *M*. In order to structure an argument properly, it is necessary to have a good understanding of these terms.
- The terms are called, respectively:
  - _____
  - _____
  - _____
- The minor term is the _____ term of the _____. The minor term above was *roses*, or *S*.
- The major term is the _____ term of the _____. In our syllogism, the major term was *living things*, or *P*.
- The middle term is the term that is in _____ but is not in the _____ at all. It is called the middle term because it connects the premises together. In our example, the middle term was *red plants*, or *M*.

The Syllogism

- As you might suspect, the _____ is the premise that contains the _____. Traditionally, the major premise is the _____ in the argument.
- The _____ is the premise that contains the _____. There is no middle _____, only a middle _____.
- In our example above, the major premise was _____ (it contains the major term—_____).
- The minor premise was _____ (it contains the minor term—_____).
- The conclusion follows because the argument is _____. If the premises were true, the conclusion would necessarily have to be true. (Note the minor premise happens to be false, but this does not affect the validity of the syllogism.)

The Syllogism

- Consider the following syllogism:
  - All ringed planets are gas giants, so no inner planets are ringed planets, since no inner planets are gas giants.
- This syllogism is not in the traditional order for standard categorical syllogisms. To put in into standard form, follow these steps.
- 1) _____.
  - *No inner planets are ringed planets*. We know this because it starts with the word *so* and precedes the word *since*.
- 2) _____.
  - The major term is the predicate of the conclusion (*ringed planets*).
- 3) _____.

- The major premise is the premise containing the major term. Since the major term is *ringed planets*, the major premise is *All ringed planets are gas giants*.

The Syllogism

- 4) _____.
  - The minor premise contains the minor term. It is also the statement that is neither the major premise nor the conclusions.
  - In the example above, the minor premise is *No inner planets are gas giants*. To check, we see that this does contain the minor term, *inner planets*.
- 5) _____.
  - Major Premise—All ringed planets are gas giants.
  - Minor Premise—No inner planets are gas giants.
  - Conclusion—Therefore, no inner planets are ringed planets.

Practice

- Find the major, minor and middle terms for each syllogism.
- All theology is the study of the infinity, so all calculus problems are theology, because all calculus problems are a study in infinity.
  - Major Term:
  - Minor Term:
  - Middle Term:
- Some pagans are idolaters, because no pagans are Christians, and no Christians are idolaters.
  - Major Term:
  - Minor Term:
  - Middle Term:

Practice

- Rewrite the following arguments into standard order for categorial syllogisms.
- All murderers are criminals, and some heroes of the faith were murderers, from which it follows that some criminals are heroes of the faith.

_____
_____
_____

- No street legal vehicles are stock cars. Thus no racing car is street legal, since all stock cars are racing cars.

_____
_____
_____

Syllogism Summary

- A syllogism is a _____ with _____ and _____. The minor term is the subject of the conclusion, the major term is the predicate of the conclusion, the missile term is not the conclusion, but is in both premises.
- The _____ is the premise containing the _____.
- The _____ is the premise containing the _____.
- The standard order for categorical syllogisms is: _____.

Works Cited

Introductory Logic: The Fundamentals of Thinking Well. Moscow, ID: Canon Press, 2014.