

Phil. 103: Introduction to Logic

Test 1: The Structure of Arguments

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1 Diagramming Arguments

Directions:

First, indicate whether the passages quoted below are arguments or not. If the passage is not an argument, tell why it is not. *Second*, only if the passage is an argument, diagram the structure of the argument by referring to the numbered statements using conventional diagramming symbols. (40 points)

1. (1) It's evident that minature comets are slamming into the earth's atmosphere since (2) satellite pictures show dark spots in the upper atmosphere caused by the arrival of low density iceballs.
2. (1) We are what we pretend to be, so (2) be careful what you pretend to be.
3. (1) Since there are no mental diseases, (2) there can be no treatments for them.
4. (1) John didn't get much sleep last night. (2) He has dark circles under his eyes, and (3) he looks tired.

5. (1) Trans-fatty acids in margarine raise levels of cholesterol in the blood more than saturated fats in butter raise level of cholesterol. (2) For this reason, butter might be more healthful than margarine.

6. (1) The Roman Empire collapsed because (2) it lacked the spirit of liberalism and free enterprise.

7. (1) Piezoelectric flashes are seen only in crushing asymmetrical crystals, and (2) wintergreen mints are asymmetrical sugar crystals. Therefore, (3) wintergreen mints give off flashes of light when you crunch them.

8. (1) French researchers have apparently located the lost remains of a Neanderthal child found in 1914 at Le Moustier. (2) Evidence for this conclusion includes the fact that the bones were embedded in a sediment long associated with the soil of Le Moustier and (3) flint flakes stored with the child's skeleton were identical to stones found among other Le Moustier Neandertals.

9. (2) Because houses with pets have higher amounts of bacterial-breakdown products than pet-free homes do, and (2) these products force the immune system to develop response patterns making the immune system less sensitive to allergens later in life, (3) scientists conclude that children who never had pets around are far more likely to have allergic responses as were children exposed to pets.

10. (1) As coal seams have been discovered in Antarctica, (2) it's clear that the climate there was once warmer than it is now. (3)Hence, either the geographical location of the continent has shifted or the whole Earth was once warmer than it is now.

2 Truth, Validity, and Soundness

Directions:

Carefully study statements 1-10. Decide whether each statement is true or false, and write in the spaces provided the word "true" or the work "false" in accordance with your decision. (20 points)

1. _____ A sound argument is a valid deductive argument with true premisses.
2. _____ All valid deductive arguments are arguments with true premisses.
3. _____A deductive argument cannot be both invalid and sound.
4. _____An invalid deductive argument could have all true statements in it.
5. _____In a valid deductive argument, the conclusion is always true.
6. _____A deductive argument could have one false premiss and still be sound.
7. _____If a deductive argument is sound, then the conclusion must always be true.
8. _____When the premisses of a deductive argument are true, the conclusion must be true as well.
9. _____When the conclusion of a deductive argument is true, the argument is always sound.
10. _____A deductive argument can be either valid or invalid and still have true premisses.

3 Conclusion and Premiss Indicators

Directions:

Assume that each word or phrase given below appears before a statement. Is the statement that follows most probably a reason, a conclusion, or neither? Put a check in the appropriate column. (20 points)

Word	Reason	Conclusion	Neither
1. hence			
2. and			
3. since			
4. thus			
5. in as much as			
6. accordingly			
7. for the reason			
8. therefore			
9. as a result			
10. because			

4 Short Essay

Directions: Explain the difference between the terms in the following exercises and give an specific example of each term. 20 points

1. statement and sentence which is not a statement

2. inductive and deductive argument

3. valid argument and sound argument

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