

LOGIC  
Test: Introduction and informal fallacies

File 1 (BC) R8411  
(H-BC-LOG1)

Name \_\_\_\_\_  
Corrector \_\_\_\_\_  
100 points total

PART I. MULTIPLE CHOICE. Circle the letter of the correct response. There is only one correct answer for each question. Each question is worth four points.

1. (4 pts.) What is "logic"?
  - a. The science of formal reasoning, using the principles of valid inference.
  - b. The science of disproving thinking that is based on emotion rather than fact.
  - c. The science of cause and effect relationships.
  - d. The system of depicting thoughts by using symbols that represent those thoughts.
  - e. The science of discerning truth from error.
  
2. (4 pts.) How does modern society teach people to think illogically?
  - a. The media feed people conclusions without explaining the reasoning behind the conclusions, so people do not think for themselves.
  - b. Continual exposure to advertising trains people to make decisions based on emotion rather than facts.
  - c. Our sinful society conditions people to indulge in every momentary pleasure available, instead of considering the consequences of their actions.
  - d. All of the above.
  - e. None of the above.
  
3. (4 pts.) What is "reasoning"?
  - a. Formulating thoughts in the mind.
  - b. Deciding to believe certain statements.
  - c. Predicting a result or event based on information.
  - d. Acquiring knowledge about a subject.
  - e. Drawing conclusions based on premises.
  
4. (4 pts.) What does logic guarantee about arguments under consideration?
  - a. If the premises are true, the conclusion must be true.
  - b. If the premises are false, the conclusion must be false.
  - c. If the argument is valid, the conclusion must be valid.
  - d. If the argument is invalid, the conclusion must be invalid.
  - e. If the premises are true and the argument is valid, the conclusion must be true.
  
5. (4 pts.) Why is logic inadequate?
  - a. It cannot prove or disprove the truth of premises.
  - b. It cannot prove or disprove the truth of conclusions.
  - c. It cannot prove or disprove the validity of arguments.
  - d. All of the above.
  - e. None of the above.

(continued)

6. (4 pts.) Why is logic valuable?
- It can be used to solve all theological problems.
  - It is independent of the subject matter under consideration.
  - It provides insight into how to form conclusions, as well as how to test whether they are true.
  - All of the above.
  - None of the above.
7. (4 pts.) What is a "fallacy" in terms of logic?
- A false statement.
  - A myth, old wife's tale, or commonly believed superstition that has no basis in fact.
  - An argument that is so obviously wrong that it deceives no one.
  - An argument that is valid, but has one or more false premises.
  - An argument that is psychologically persuasive, but incorrect.
8. (4 pts.) Which advantage does the Christian have, in light of the fact that God's Word, the Bible, is inspired?
- Every premise stated in Scripture can be accepted as true without proof.
  - The Bible contains formal arguments, including all the conclusions needed to settle every theological dispute.
  - Since logic applies only to reasoning in the natural realm (even sinners can do this), the Christian uses the Bible instead of his natural mind to base spiritual decisions upon.
  - All of the above.
  - None of the above.

PART II. CHECK ALL THAT APPLY. Place a check in the blank next to the letter of every correct response. Point values for partial credit are noted.

All right, 4 pts; 1 wrong, -2; 2 wrong, -3; 3 or more wrong, -4

Check all the statements that apply to deductive reasoning.

- It involves reasoning from specific to general.
- Its arguments are either "valid" or "invalid."
- Additional information makes no difference in the argument.
- The truth of its premises is said to provide conclusive grounds for the truth of its conclusion.

(continued)

PART III. MATCHING. Match the responses in the right column to their corresponding premises in the left column by placing the letters of the correct responses in the blanks provided. Some responses may be used more than once. Point values for partial credit are noted above each question.

All right, 10 pts.; 1 wrong, -2; 2 wrong, -4; 3 wrong, -6; 4 wrong, -8; 5 or more wrong, -10

A. Match the terms to their definitions.

- |   |                   |
|---|-------------------|
| ___ 1. The study of principles that distinguish correct reasoning from incorrect reasoning.       | a. Argument       |
| ___ 2. An assertion or statement.   | b. Assumption     |
| ___ 3. A process by which a statement is arrived at on the basis of one or more other statements. | c. Conclusion     |
| ___ 4. A statement arrived at by correct reasoning.   | d. Definition     |
| ___ 5. A group of statements where one is said to follow from the others.                         | e. Explanation    |
| ___ 6. A statement used as the starting point for correct reasoning.                              | f. Generalization |
|   | g. Hypothesis     |
|   | h. Inference      |
|   | i. Logic          |
|   | j. Premise        |
|   | k. Proposition    |
|   | l. Rebuttal       |

(continued)

All right, 14 pts.; 1 wrong, -2; 2-3 wrong, -4; 4 wrong, -6; 5-6 wrong, -8; 7 wrong, -10; 8-9 wrong, -12; 10 wrong, -14

B. Match the fallacies to their definitions.

- |  |                             |
|--|-----------------------------|
| ___ 1. Appeal to force.  | a. Accident                 |
| ___ 2. Appeal to pity.   | b. <u>Ad Baculum</u>        |
| ___ 3. Appeal to majority opinion.                                       | c. <u>Ad Hominem</u>        |
| ___ 4. Appeal to experts in the wrong field.                             | d. <u>Ad Ignorantiam</u>    |
| ___ 5. Appeal to the fact that the conclusion has not been disproved.    | e. <u>Ad Misericordiam</u>  |
| ___ 6. Appeal to an irrelevant conclusion.                               | f. <u>Ad Populum</u>        |
| ___ 7. Assuming the conclusion as a premise.                             | g. <u>Ad Verecundiam</u>    |
| ___ 8. Attacking the person instead of the argument.                     | h. Complex Question         |
| ___ 9. Misapplying a general rule to an unusual specific case.           | i. False Cause              |
| ___ 10. Mistakenly drawing a general rule from an unusual specific case. | j. Hasty Generalization     |
|  | k. <u>Ignoratio Elenchi</u> |
|  | l. <u>Petitio Principii</u> |

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(5)

File 1 (BC)

All right, 10 pts.; 1 wrong, -2; 2 wrong, -4; 3 wrong, -6; 4 wrong, -8; 5 or more wrong, -10

C. Match the fallacies to their examples.

- |  |                             |
|--|-----------------------------|
| _____ 1. Everyone agrees it is essential to separate church and state. Therefore, it is wrong for the Moral Majority to distribute literature telling each candidate's position on moral issues.                               | a. Accident                 |
| _____ 2. The Mormon Prophet Joseph Smith died a martyr's death at the hands of a ruthless mob. Mormon women and children have suffered indignities and cruelties from unmerciful persecutors. The Mormon faith must be of God. | b. <u>Ad Baculum</u>        |
| _____ 3. "Well, my opponent often has memory lapses like that. Even his mother refuses to vote for him."   | c. <u>Ad Hominem</u>        |
| _____ 4. "Of course Rev. Moon is the Third Adam. No Christian minister has ever demonstrated that he isn't."   | d. <u>Ad Ignorantiam</u>    |
| _____ 5. "Baseball, hot dogs, apple pie, and Chevrolet. More Americans drive Chevrolets than any other car. Chevrolet is the car for you."   | e. <u>Ad Misericordiam</u>  |
| _____ 6. "Did you repent after falling into this heresy?" "No." "Then you admit you fell into heresy!"   | f. <u>Ad Populum</u>        |
|  | g. <u>Ad Verecundiam</u>    |
|  | h. Complex Question         |
|  | i. False Cause              |
|  | j. Hasty Generalization     |
|  | k. <u>Ignoratio Elenchi</u> |
|  | l. <u>Petitio Principii</u> |

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File 1 (BC)

All right, 10 pts.; 1 wrong, -2; 2 wrong, -4; 3 wrong, -6; 4 wrong, -8; 5 or more wrong, -10

D. Match the fallacies to their examples.

- |  |                             |
|--|-----------------------------|
| _____ 1. "Shopping malls make people hungry, because wherever there is a shopping mall, people in it get hungry."  | a. Accident                 |
| _____ 2. You see your toddler under high voltage wires, but cannot rescue her because the sign says "No Trespassing."  | b. <u>Ad Baculum</u>        |
| _____ 3. "This seminary hereby refuses to grant you your Ph.D. degree because we have learned you now practice speaking in other tongues. Please reconsider this matter and submit a written statement to the board renouncing this fanatical nonsense." | c. <u>Ad Hominem</u>        |
| _____ 4. "Our first dog had fleas and nearly ruined the house. Now this mutt has them, too. All dogs ought to be outlawed as house pets—they're nothing but fleabags."   | d. <u>Ad Ignorantiam</u>    |
| _____ 5. The seventieth week of Daniel represents a seven-year period of tribulation at the end of time characterized by the rule of the antichrist. The tribulation consists of two 3 1/2 year segments, because it is Daniel's seventieth week.        | e. <u>Ad Misericordiam</u>  |
| _____ 6. "Dr. Smith said I should invest heavily in diamonds before the end of the year. He should know—he's my dentist."  | f. <u>Ad Populum</u>        |
|  | g. <u>Ad Verecundiam</u>    |
|  | h. Complex Question         |
|  | i. False Cause              |
|  | j. Hasty Generalization     |
|  | k. <u>Ignoratio Elenchi</u> |
|  | l. <u>Petitio Principii</u> |

(continued)

LOGIC

File 1 (BC)

All right, 10 pts.; 1 wrong, -2; 2 wrong, -4; 3 wrong, -6; 4 wrong, -8; 5 wrong, -10

E. Match the fallacies to their definitions.

- |  |                         |
|--|-------------------------|
| ___ 1. Occurs when different meanings of a word are confused in the same argument.                 | a. Accent               |
| ___ 2. Occurs when one argues from premises that are grammatically ambiguous.                      | b. Accident             |
| ___ 3. Occurs when accenting part of a premise changes the meaning of the premise.                 | c. Amphiboly            |
| ___ 4. Occurs when wrongly inferring the attributes of the whole from the attributes of its parts. | d. Complex Question     |
| ___ 5. Occurs when wrongly inferring that what is true of the whole must be true of its parts.     | e. Composition          |
|  | f. Division             |
|  | g. Equivocation         |
|  | h. False Cause          |
|  | i. Hasty Generalization |
|  | j. Ignoratio Elenchi    |
|  | k. Petitio Principii    |

All right, 10 pts.; 1 wrong, -2; 2 wrong, -4; 3 wrong, -6; 4 wrong, -8; 5 wrong, -10

F. Match the fallacies to their examples.

- |  |                         |
|--|-------------------------|
| ___ 1. Water extinguishes fires. Since water consists of hydrogen gas and oxygen gas, these gases are excellent for putting out fires.   | a. Accent               |
| ___ 2. The pastor is a hypocrite. He preaches against drugs, but I saw him in the drugstore buying drugs.  | b. Accident             |
| ___ 3. If you become a Pentecostal, God will be concerned for you.   | c. Amphiboly            |
| ___ 4. The first three pages of the book were blank. So I turned to the back and the last three were blank too. I threw it away without looking at the rest, obviously the whole book was blank. | d. Complex Question     |
| ___ 5. God <u>killed</u> Onan, and He <u>killed</u> Korah and others. God is a killer.   | e. Composition          |
|  | f. Division             |
|  | g. Equivocation         |
|  | h. False Cause          |
|  | i. Hasty Generalization |
|  | j. Ignoratio Elenchi    |
|  | k. Petitio Principii    |

LOGIC  
Test: Fallacies of relevance

File 2 (BC) R853  
(H-BC-LOG2)

Name \_\_\_\_\_  
Corrector \_\_\_\_\_  
100 points total

PART I. MULTIPLE CHOICE. Circle the letter of the fallacy in each of the statement(s) below. There is only one correct answer for each question. Each question is worth four points.

1. (4 pts.) Speaking in tongues cannot be Scriptural because it causes division. Gifts from God do not cause division. Everywhere speaking in tongues occurs, Christians argue and debate about it.
  - a. Argumentum ad Baculum.
  - b. Argumentum ad Hominem.
  - c. Argumentum ad Misericordiam.
  - d. Hasty generalization.
  - e. Ignoratio Elenchi.
  
2. (4 pts.) Might proves you are right.
  - a. Argumentum ad Baculum.
  - b. Argumentum ad Hominem.
  - c. Argumentum ad Ignorantiam.
  - d. Argumentum ad Misericordiam.
  - e. Argumentum ad Verecundiam.
  
3. (4 pts.) Obviously, my client is innocent of these charges. Picture his poor forsaken wife crying herself to sleep at night, worrying about her helpless husband unfairly locked up in a cruel prison. Imagine his starving children asking where loving Daddy is. Surely imprisoning an innocent man is a greater crime.
  - a. Argumentum ad Baculum.
  - b. Argumentum ad Misericordiam.
  - c. Argumentum ad Populum.
  - d. Circular reasoning.
  - e. Complex question.
  
4. (4 pts.) Speaking in tongues is not of God. If you continue to practice this heresy, you will be put out of the church. You would be smart to drop the whole issue.
  - a. Argumentum ad Baculum.
  - b. Argumentum ad Ignorantiam.
  - c. Argumentum ad Populum.
  - d. Complex question.
  - e. False cause.
  
5. (4 pts.) Mr. Scrooge, I deserve a raise in pay. My youngest child Tim needs an operation if he is ever to walk without crutches.
  - a. Argumentum ad Baculum.
  - b. Argumentum ad Hominem.
  - c. Argumentum ad Ignorantiam.
  - d. Argumentum ad Misericordiam.
  - e. Hasty generalization.

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6. (4 pts.) Praise the Lord for His guidance! While we stood here hitchhiking, praying for God to lead us, you drove up in a Pontiac with Michigan license plates. God wants us to go to Pontiac, Michigan!
  - a. Accident.
  - b. Argumentum ad Ignorantiam.
  - c. Circular reasoning.
  - d. False cause.
  - e. Hasty generalization.
7. (4 pts.) Speaking in tongues is not of God. Only over-emotional Pentecostal fanatics babble incoherent nonsense in wild unchristian rites.
  - a. Argumentum ad Hominem.
  - b. Argumentum ad Ignorantiam.
  - c. Circular reasoning.
  - d. False cause.
  - e. Hasty generalization.
8. (4 pts.) It has to be right because everybody is doing it.
  - a. Accident.
  - b. Argumentum ad Hominem.
  - c. Argumentum ad Populum.
  - d. Hasty generalization.
  - e. Ignoratio Elenchi.
9. (4 pts.) Hebrews 9:27 says, "It is appointed unto men once to die, but after this the judgment." This leaves no room for any so-called Rapture.
  - a. Accident.
  - b. Argumentum ad Hominem.
  - c. Argumentum ad Ignorantiam.
  - d. Hasty generalization.
  - e. Ignoratio Elenchi.
10. (4 pts.) "The leadership of the modern 'tongues' movement has admitted that they have no authenticated proof that translatable foreign languages have been spoken in their assemblies by persons with no knowledge of the same." This proves that modern speaking in tongues is not authentic. (Duane Spencer, Word of Grace Radio Broadcast, 1974.)
  - a. Argumentum ad Hominem.
  - b. Argumentum ad Ignorantiam.
  - c. Argumentum ad Verecundiam.
  - d. Hasty generalization.
  - e. Ignoratio Elenchi.
11. (4 pts.) "'Jesus Only' rejection of 1 John 5:7 is, undoubtedly, motivated to a great extent by the fact that the verse constitutes one of the most explicit declarations of the Trinitarian doctrine in the Bible!" (Carl Brumback, God in Three Persons, pp. 30, 31.)
  - a. Argumentum ad Hominem.
  - b. Argumentum ad Ignorantiam.
  - c. Circular reasoning.
  - d. Hasty generalization.
  - e. Ignoratio Elenchi.

(continued)

12. (4 pts.) If God wants Christians to speak in tongues, why do the majority of Christians refuse to speak in tongues?
- Accident.
  - Argumentum ad Misericordiam.
  - Argumentum ad Populum.
  - Complex question.
  - Ignoratio Elenchi.
13. (4 pts.) Do you support religious bigotry and the Moral Majority?
- Argumentum ad Baculum.
  - Argumentum ad Hominem.
  - Argumentum ad Ignorantiam.
  - Circular reasoning.
  - Complex question.
14. (4 pts.) It is obvious that modern speaking in tongues is not of God. Almost none of the one billion Christians in the world today speaks in tongues.
- Argumentum ad Ignorantiam.
  - Argumentum ad Populum.
  - Argumentum ad Verecundiam.
  - Circular reasoning.
  - Hasty generalization.
15. (4 pts.) "It is of interest to note in passing that there is a growing number of Pentecostal people who are having mental breakdowns and receiving psychiatric treatment across the world." (John MacKenzie.)
- Argumentum ad Ignorantiam.
  - Argumentum ad Misericordiam.
  - Argumentum ad Populum.
  - Circular reasoning.
  - Hasty generalization.
16. (4 pts.) Psychiatrist Stuart Bergsma said, "Glossolalia...can be psychologically explained and is not, in general, a 'spiritual' phenomenon." Therefore, speaking in tongues is neither Scriptural nor Christian.
- Argumentum ad Hominem.
  - Argumentum ad Populum.
  - Argumentum ad Verecundiam.
  - Circular reasoning.
  - Hasty generalization.
17. (4 pts.) It was wrong for Paul to remain single, because the Bible says a man should leave his father and mother and marry a wife. This is not optional, it is a command of God.
- Accident.
  - Argumentum ad Baculum.
  - Argumentum ad Verecundiam.
  - False cause.
  - Hasty generalization.

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18. (4 pts.) Paul taught that the highest way of life is to remain single. After all, he was inspired by God to write, "He that giveth in marriage doeth well; but he that giveth not in marriage doeth better" (1 Cor. 7:38).
- Argumentum ad Hominem.
  - Argumentum ad Populum.
  - False cause.
  - Hasty generalization.
  - Ignoratio Elenchi.
19. (4 pts.) Modern speaking in tongues cannot be of God because a few interpretations of tongues have glorified Mary as the Mother of God and supported other false doctrines of Roman Catholicism.
- Argumentum ad Ignorantiam.
  - Argumentum ad Populum.
  - Circular reasoning.
  - False cause.
  - Hasty generalization.
20. (4 pts.) "Glossolalia is therefore not a part of the great tradition of historic Christianity but is rather an isolated phenomenon which has occurred sporadically, under unusual circumstances." (Anthony Hoekema, What About Tongue Speaking?, p. 23.)
- Accident.
  - Argumentum ad Hominem.
  - Argumentum ad Populum.
  - Argumentum ad Verecundiam.
  - Circular reasoning.
21. (4 pts.) The modern experience of speaking in tongues is easily disproved. Many Pentecostals have testified that they suffered strong doubts and even confusion after they spoke in tongues for the first time. This shows that the experience is of the devil.
- Accident.
  - Argumentum ad Hominem.
  - Argumentum ad Misericordiam.
  - False cause.
  - Ignoratio Elenchi.
22. (4 pts.) Liberal political views are superior to conservative ones, because liberals are intellectuals. Intellectuals are defined as people who hold liberal views.
- Accident.
  - Argumentum ad Ignorantiam.
  - Circular reasoning.
  - Complex question.
  - Ignoratio Elenchi.

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PART II. MATCHING. Match the responses in the right column to their corresponding premises in the left column by placing the letters of the correct responses in the blanks provided. Each response will be used only once. Point values for partial credit are noted above each question.

All right, 6 pts.; 1 wrong, -1; 2 wrong, -2; 3 wrong, -3; 4 wrong, -4; 5 wrong, -5; 6 wrong, -6.

A. Match the definitions to their terms.

- |                                       |                                    |
|---------------------------------------|------------------------------------|
| _____ 1. Argumentum ad Baculum.       | a. Appeal to authority.            |
| _____ 2. Argumentum ad Hominem.       | b. Appeal to force.                |
| _____ 3. Argumentum ad Ignorantiam.   | c. Appeal to greed.                |
| _____ 4. Argumentum ad Misericordiam. | d. Appeal to humor.                |
| _____ 5. Argumentum ad Populum.       | e. Appeal to the majority.         |
| _____ 6. Argumentum ad Verecundiam.   | f. Appeal to the minority.         |
|                                       | g. Appeal to pity.                 |
|                                       | h. Argument from history.          |
|                                       | i. Argument from ignorance.        |
|                                       | j. Argument from wrong definition. |
|                                       | k. Directed to emotion.            |
|                                       | l. Directed to the man.            |

All right, 6 pts.; 1 wrong, -1; 2 wrong, -2; 3 wrong, -3; 4 wrong, -4; 5 wrong, -5; 6 wrong, -6.

B. Match the definitions to their terms.

- |                                |   |
|--------------------------------|---|
| _____ 1. Accident.             | a. Applying a general rule to an exception case.            |
| _____ 2. Circular reasoning.   | b. Argument from analogy.                                   |
| _____ 3. Complex question.     | c. Argument from authority in another field.                |
| _____ 4. False cause.          | d. Argument from ignorance.                                 |
| _____ 5. Hasty generalization. | e. Argument from tradition.                                 |
| _____ 6. Ignoratio Elenchi.    | f. Assuming the conclusion as a premise.                    |
|                                | g. Assuming the first event always causes the second event. |
|                                | h. Complicated premise.                                     |
|                                | i. Drawing a general rule from an unusual case.             |
|                                | j. Ignorance of the consequences.                           |
|                                | k. Irrelevant conclusion.                                   |
|                                | l. Tricking opponent into incriminating himself.            |

1. Truth Tables

Truth tables are simply a mechanical invention that lists all the possible combinations of p with q and the resulting truth value of compound propositions such as  $p \cdot q$ . The truth value of a true statement is symbolized by the number 1. The truth value of a false statement is symbolized by the number 0.

2. Conjunction

- Placing "and" or a synonym between two statements.
- The logic symbol is  $\cdot$ , called a dot.
- The conjunction of statements p and q is written  $p \cdot q$ .
- The truth table for  $p \cdot q$  is:

p	q	$p \cdot q$
1	1	1
1	0	0
0	1	0
0	0	0

3. Negation

- The denial of a statement.
- Commonly called "not p," because it reverses the value of p.
- The logic symbol is  $\sim$ , called a curl.
- If p is a statement,  $\sim p$  is its negation.
- The truth table for  $\sim p$  is:

p	$\sim p$
1	0
0	1

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4. Disjunction

- Placing "or" between two statements.
- The logic symbol is " $\vee$ ," called a vee.
- Disjunction always refers to the inclusive idea (one or the other or both).
- The truth table for  $p \vee q$  is:

p	q	$p \vee q$
1	1	1
1	0	1
0	1	1
0	0	0

- The exclusive disjunction (p or q, but not both) is a different expression. It is symbolized by  $(p \vee q) \cdot \sim(p \cdot q)$ , which represents (p or q) and not (p and q). Sometimes the exclusive disjunction is symbolized by  $p \wedge q$ , but this is unnecessary.

5. Conditional Statements and Material Implication

- Two statements joined in an "if, then" combination.
- The first statement (after "if") is called the antecedent, and the second statement (after "then") is called the consequent.
- The antecedent implies the consequent.
- If p is true, then q is true.
- The logic symbol is  $\supset$ , called a horseshoe.
- The truth table for  $p \supset q$  is:

p	q	$p \supset q$
1	1	1
1	0	0
0	1	1
0	0	1

I. FALLACIES OF RELEVANCE

1. Argumentum ad Baculum: Appeal to force (e.g., "Might makes right.").
2. Argumentum ad Hominem: Literally means "argument directed to the man."
  - a. Abusive: Attacking the person rather than the argument.
  - b. Circumstantial: A person's view is not based on logic, but on some special interest he has or circumstance he faces.
3. Argumentum ad Ignorantiam: Argument from ignorance.  
This fallacy occurs when someone maintains that a proposition is true because it has not been proved false, or it is false because it has not been proved true.
4. Argumentum ad Misericordiam: Appeal to pity.  
This fallacy occurs when someone appeals to pity to get his conclusion accepted, when the conclusion deals with a matter of fact rather than emotion.
5. Argumentum ad Populum: Appeal to the people (e.g., "Everybody's doing it.").
6. Argumentum ad Verecundiam: Appeal to authority.  
This fallacy occurs when someone uses an authority in one field to support a conclusion in another field where the person consulted is not an expert.
7. Fallacy of Accident: Applying a general rule to a particular case whose accidental circumstances render the rule inapplicable. It is often committed when qualifications are ignored. Many rules have some exceptions.
8. Hasty Generalization (opposite of Fallacy of Accident): Drawing a hasty conclusion from an unusual or atypical example.
9. False Cause:
  - a. To mistake what is not the cause of an event for its cause (the more general of the two aspects).
  - b. To infer that one event causes another simply because it occurs before the other.
10. Petitio Principii: Circular reasoning.  
This fallacy occurs when someone assumes as a premise the very conclusion of his argument itself (i.e., he assumes what he is trying to prove).
11. Complex Question: An argument based on a complex (trick) question (i.e., one which presupposes an answer to a prior question which has not been asked). A complex question is often called a "loaded question."

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12. Ignoratio Elenchi: Irrelevant conclusion.  
This fallacy occurs when an argument claiming to establish a conclusion is used to prove a different conclusion. Often the two issues are emotionally linked.

## II. FALLACIES OF AMBIGUITY

1. Equivocation: Equivocation occurs when different meanings of a word are confused in the same argument.
2. Amphiboly: Arguing from premises that are grammatically ambiguous.
3. Fallacy of Accent: Shifts of meaning due to changes in accent.
4. Fallacy of Composition: Wrongly inferring the attributes of the whole from its parts, or of a collection from its elements or members.
5. Fallacy of Division (opposite of Fallacy of Composition): Arguing that what is true of the whole must be true of the parts, or what is true of a collection must be true of each member or element itself.



The basic terms used in logic are defined below.

1. **LOGIC:** The study of principles that distinguish good reasoning from bad reasoning. This is a simple working definition of logic.  
More precisely, logic is the study of rules that govern sound thinking and proof by reasoning. It is the science of formal reasoning using the principles of valid inference. Inference is a process by which conclusions are drawn from premises.  
There are tests that reveal whether reasoning is correct or incorrect. Logic is the study of these tests. These tests are principles, rules, or laws that tell how to draw correct conclusions from premises.
2. **REASONING:** A mental process or special kind of thinking in which inference takes place (i.e., conclusions are drawn from premises).  
Reasoning is thinking correctly about facts in order to draw correct conclusions from those facts. "Reasoning" is a more general word than "inference."
3. **INFERENCE:** The act or process of drawing conclusions from premises.  
Inference is the process of concluding from evidence, or deducing. It is the act of drawing a conclusion or making a deduction based on facts or indications.  
Inference is the process by which one proposition is arrived at or affirmed on the basis of one or more other propositions accepted as the starting point of the process. Inference refers to a specific part of the reasoning process.
4. **SYLLOGISM:** A form of deductive reasoning consisting of a major premise, a minor premise, and a conclusion.  
For example, All men are foolish (major premise); Smith is a man (minor premise); therefore, Smith is foolish (conclusion).
5. **PROPOSITION:** A statement about something.  
A proposition is an assertion, a declaration stated positively, but with no support or attempt at proof.
6. **PREMISE:** A proposition upon which an argument is based or from which a conclusion is drawn.  
The propositions that are the starting point of the inference process are called premises. Premises are the first two propositions (major or minor) of a syllogism, from which a conclusion is drawn. A proposition becomes a premise when it is used in an argument as the basis for drawing a conclusion.
7. **CONCLUSION:** The proposition concluded from one or more premises.  
The proposition arrived at in the process of inference is called the conclusion. In a syllogism, the conclusion is the proposition that must follow from the major and minor premises. The conclusion is the logical consequence derived from facts.

(continued)

8. ARGUMENT: A group of propositions containing a premise(s) and a conclusion.

A syllogism is an argument. An argument may have just one premise and a conclusion. An argument is any group of propositions in which one proposition follows from the others (the premises) that support it.

9. DEDUCTIVE ARGUMENT: An argument in which the premises claim to prove the conclusion.

Deductive arguments are valid or invalid.

Deduction is the process of reasoning in which a conclusion must follow from the stated premises. Deduction is a specific type of inference which reasons from the general to the specific. Memory tip: "De-duction" decreases, from large, broad generalizations to small, specific truths.

10. INDUCTIVE ARGUMENT: An argument in which the premises claim to support the conclusion.

Inductive arguments do not prove the conclusion; they only provide evidence for it. Inductive arguments are said to be better or worse, good or bad. The conclusion is not proved to be valid or invalid.

Induction is the process of reasoning to a conclusion about all members of a class from examination of only a few members of the class. Induction is a specific type of inference that reasons from the specific to the general. Memory tip: "In-duction" increases, from small, specific cases to large, broad generalizations.

LOGIC  
Test: Symbolic logic

File 7 (BC) R853

Name \_\_\_\_\_

Corrector \_\_\_\_\_

100 points total

PART I. SHORT ANSWER. Write the correct response to each question or statement in the space provided. Show your work when necessary. Point values are noted for each question.

1. (8 pts. total; 2 pts. per answer) Write the symbolic logic symbol for each operator.

- a. Negation \_\_\_\_\_
- b. Disjunction \_\_\_\_\_
- c. Material implication \_\_\_\_\_
- d. Conjunction \_\_\_\_\_

2. (14 pts. total) Complete the following truth tables.

a. (4 pts.)

p	q	$p \supset q$
1	1	_____
1	0	_____
0	1	_____
0	0	_____

b. (4 pts.)

p	q	$p \vee q$
1	1	_____
1	0	_____
0	1	_____
0	0	_____

c. (2 pts.)

p	$\sim p$
1	_____
0	_____

d. (4 pts.)

p	q	$p \cdot q$
1	1	_____
1	0	_____
0	1	_____
0	0	_____

(continued)

3. (4 pts.) How many lines must a truth table have for an argument with five variables? \_\_\_\_\_
4. (6 pts. total; 2 pts. per answer) A and B are true statements. X and Y are false statements. What is the total truth value of each statement?
- $(A \supset Y) \cdot (B \supset A)$  \_\_\_\_\_
  - $(X \supset Y) \vee (\sim A \supset \sim B)$  \_\_\_\_\_
  - $(A \cdot B) \supset (X \cdot Y)$  \_\_\_\_\_
5. (10 pts.) Translate the following argument into symbolic logic form. Use the symbols in parentheses to represent the statements they follow.
- If God is a tyrant (T), He will exercise control (C).  
 If God is a tyrant (T), He will require things of His people (R).  
 God will both exercise control (C) and require things of His people (R).  
 Therefore, God is a tyrant (T).
6. (5 pts.) Construct a truth table that proves whether the following argument is valid or invalid. Show your work in the space provided. State whether the argument is valid or invalid.
- p  
 $\therefore p \supset q$
7. (10 pts.) Construct a truth table that proves whether the following argument is valid or invalid. Show your work in the space provided. State whether the argument is valid or invalid.
- p  $\supset$  (q  $\supset$  r)  
 p  $\supset$  q  
 $\therefore p \supset r$

(continued)

8. (15 pts.) Construct a truth table that proves whether the following argument is valid or invalid. Show your work in the space provided. State whether the argument is valid or invalid.

$$\begin{aligned} & A \supset B \\ & A \vee C \\ & \sim B \\ \therefore & C \cdot \sim A \end{aligned}$$

PART II. MATCHING. Match the responses in the right column to their corresponding premises in the left column. No response will be used more than once. (28 pts. total; 4 pts. per answer)

- |   |  |
|---|--|
| <p>_____ 1. <math>p \supset q</math><br/> <math>q \supset r</math><br/> <math>\therefore p \supset r</math></p>                 | <p>a. Constructive Dilemma.<br/> b. Disjunctive Synthesis.<br/> c. Disjunctive Syllogism.<br/> d. Hypothetical Syllogism.<br/> e. Simplistic Syllogism.<br/> f. Fallacy of Assumption.<br/> g. Fallacy of Affirming the Antecedent.<br/> h. Fallacy of Affirming the Consequent.<br/> i. Fallacy of Denying the Antecedent.<br/> j. Fallacy of Denying the Consequent.<br/> k. Inverted Negation.<br/> l. Synthetic Negation.<br/> m. Modus Ponens.<br/> n. Modus Tollens.</p> |
| <p>_____ 2. <math>p \supset q</math><br/> <math>q</math><br/> <math>\therefore p</math></p>                                     |  |
| <p>_____ 3. <math>p \vee q</math><br/> <math>\sim p</math><br/> <math>\therefore q</math></p>                                   |  |
| <p>_____ 4. <math>p \supset q</math><br/> <math>p</math><br/> <math>\therefore q</math></p>                                     |  |
| <p>_____ 5. <math>p \supset q</math><br/> <math>\sim p</math><br/> <math>\therefore \sim q</math></p>                           |  |
| <p>_____ 6. <math>(p \supset q) \cdot (r \supset s)</math><br/> <math>p \vee r</math><br/> <math>\therefore q \vee s</math></p> |  |
| <p>_____ 7. <math>p \supset q</math><br/> <math>\sim q</math><br/> <math>\therefore \sim p</math></p>                           |  |

LOGIC

Assignment 1: Formal logic exercises

File 8 (BC)

Name \_\_\_\_\_

Corrector \_\_\_\_\_

100 points total

INSTRUCTIONS: Write the total truth value of each statement in the blank provided. Do your work on separate sheets of paper. Write down every step as you do it. Staple this page on top of your work sheets.

Each exercise is worth ten points. For each exercise your work is worth five points, and your answer is worth five points.

In each statement, A, B, and C are true propositions, and X, Y, and Z are false propositions.

EXERCISES

\_\_\_\_\_ 1. (10 pts.)  $\sim B \cdot C$

\_\_\_\_\_ 2. (10 pts.)  $\sim A \vee \sim B$

\_\_\_\_\_ 3. (10 pts.)  $\sim Y \vee Z$

\_\_\_\_\_ 4. (10 pts.)  $(A \vee Z) \cdot (B \vee Z)$

\_\_\_\_\_ 5. (10 pts.)  $(A \cdot B) \vee (X \cdot Y)$

\_\_\_\_\_ 6. (10 pts.)  $\sim(A \cdot \sim B) \cdot \sim(\sim X \vee \sim Z)$

\_\_\_\_\_ 7. (10 pts.)  $\sim[(A \cdot C) \cdot \sim(X \cdot Y)]$

\_\_\_\_\_ 8. (10 pts.)  $\sim[(B \vee C) \cdot (A \vee Y)] \cdot [(X \vee Y) \cdot (B \vee Z)]$

\_\_\_\_\_ 9. (10 pts.)  $\sim[(A \cdot B) \vee (X \cdot Y)] \vee \sim[(C \cdot X) \cdot (B \vee Y)]$

\_\_\_\_\_ 10. (10 pts.)  $\sim\{[(\sim A \cdot C) \vee (\sim X \cdot Y)] \cdot [(A \vee B) \vee \sim(\sim X \cdot \sim Y)]\}$

INSTRUCTIONS: Write the total truth value of each statement in the blank provided. Do your work on separate sheets of paper. Write down every step as you do it. Staple this page on top of your work sheets.

Each exercise is worth ten points. For each exercise, your work is worth five points, and your answer is worth five points.

In each statement, A, B, and C are true propositions, and X, Y, and Z are false propositions.

EXERCISES

- \_\_\_\_\_ 1. (10 pts.)  $Y \cdot \sim Z$
- \_\_\_\_\_ 2. (10 pts.)  $\sim B \vee (X \cdot Y)$
- \_\_\_\_\_ 3. (10 pts.)  $A \vee \sim(B \cdot Z)$
- \_\_\_\_\_ 4. (10 pts.)  $(A \cdot B) \cdot \sim C$
- \_\_\_\_\_ 5. (10 pts.)  $(X \vee Y) \vee (\sim Z \cdot A)$
- \_\_\_\_\_ 6. (10 pts.)  $\sim(B \cdot C) \cdot \sim(\sim Y \cdot \sim Z)$
- \_\_\_\_\_ 7. (10 pts.)  $\sim[(A \vee B) \vee (X \vee \sim Z)]$
- \_\_\_\_\_ 8. (10 pts.)  $[(A \vee X) \cdot (B \cdot Y)] \cdot (\sim C \cdot \sim Z)$
- \_\_\_\_\_ 9. (10 pts.)  $[(X \vee Y) \vee \sim Z] \vee \sim[(A \cdot \sim B) \cdot (\sim C \vee Y)]$
- \_\_\_\_\_ 10. (10 pts.)  $\sim\left\{[(\sim A \cdot B) \vee (\sim X \vee \sim Y)] \cdot [(C \vee X) \vee \sim(Y \cdot \sim Z)]\right\}$

INSTRUCTIONS: Construct truth tables that prove whether the following arguments are valid or invalid. Write the answers in the blanks provided. Do your work on separate sheets of paper. Write down every step as you do it. Staple this page on top of your work sheets. Point values for partial credit are noted for each questions.

EXERCISES

\_\_\_\_\_ 1. (14 pts. total; 7 pts. for work, 7 pts. for answer)

$$\begin{aligned} & p \supset q \\ \therefore & p \supset (p \cdot q) \end{aligned}$$

\_\_\_\_\_ 2. (14 pts. total; 7 pts. for work, 7 pts. for answer)

$$\begin{aligned} & p \cdot q \\ \therefore & p \end{aligned}$$

\_\_\_\_\_ 3. (14 pts. total; 7 pts. for work, 7 pts. for answer)

$$\begin{aligned} & p \\ & q \\ \therefore & p \cdot q \end{aligned}$$

\_\_\_\_\_ 4. (14 pts. total; 7 pts. for work, 7 pts. for answer)

$$\begin{aligned} & p \\ \therefore & p \vee q \end{aligned}$$

\_\_\_\_\_ 5. (14 pts. total; 7 pts. for work, 7 pts. for answer)

$$\begin{aligned} & p \supset q \\ & q \supset r \\ \therefore & r \supset p \end{aligned}$$

\_\_\_\_\_ 6. (14 pts. total; 7 pts. for work, 7 pts. for answer)

$$\begin{aligned} & p \supset q \\ & p \supset r \\ \therefore & q \vee r \end{aligned}$$

\_\_\_\_\_ 7. (16 pts. total; 8 pts. for work, 8 pts. for answer)

$$\begin{aligned} & p \supset \sim q \\ & q \\ \therefore & \sim p \end{aligned}$$



LOGIC

Reference: Formal Arguments

File 11 (BC)  
(H-BC-LOG11)

1. Affirming the Consequent (invalid)

$$\begin{array}{l} p \supset q \\ q \\ \therefore p \end{array}$$

2. Disjunctive Syllogism (valid)

$$\begin{array}{l} p \vee q \\ \sim p \\ \therefore q \end{array}$$

3. Modus Ponens (valid)

$$\begin{array}{l} p \supset q \\ p \\ \therefore q \end{array}$$

4. Hypothetical Syllogism (valid)

$$\begin{array}{l} p \supset q \\ q \supset r \\ \therefore p \supset r \end{array}$$

5. Constructive Dilemma (valid)

$$\begin{array}{l} (p \supset q) \cdot (r \supset s) \\ p \vee r \\ \therefore q \vee s \end{array}$$

6. Denying the Antecedent (invalid)

$$\begin{array}{l} p \supset q \\ \sim p \\ \therefore \sim q \end{array}$$

7. Modus Tollens (valid)

$$\begin{array}{l} p \supset q \\ \sim q \\ \therefore \sim p \end{array}$$