

Exercises for Reading 8

_____ Exercises for Section I • Peruse the entire chapter. Pay particular attention to the summary. Then read the introductory section at the very beginning of chapter 12. Read this section carefully and try to understand it as best you can.

1. What are we discussing in this chapter?

Quantitative rules

2. Write out all seven rules for the validity of categorical syllogisms.

1. There must be three and only three terms.

2. The middle term must not occur in the conclusion

3. If a term is distributed in the conclusion, then it must be distributed in the premises.

4. The middle term must be distributed at least once.

5. No conclusion can follow from two negative premises.

6. If the two premises are affirmative, the conclusion must also be affirmative.

7. If either premise is negative, the conclusion must be negative.

3. How many of these rules does a syllogism have to comply with in order to be considered to be valid?

All seven.

4. Which two of these rules do we discuss in this chapter?

Quantitative rules

5. Why are these *quantitative rules*?

Because they have to do with the quantity of the statements in a syllogism.

6. With what does a statement's quantity have to do?

Whether the statement is universal or particular.

7. What are the three terms contained in a syllogism? [Review]

Major, minor, and middle

8. Explain how to distinguish major, minor and middle terms. [Review] The major term is the predicate of the conclusion.

The minor term is the subject of the conclusion.

The middle term appears in both premises, but not in the conclusion.

9. In a syllogism, which premise is the major premise? [Review]

The major premise contains the major term. In standard form, it is the first premise.

10. In a syllogism, which premise is the minor premise? [Review]

The minor premise is the premise that contains the minor term. In standard form it is the second premise.

Read "Rule III: If a Term is Not Distributed in the Premises, Then It Must Not Be Distributed in the Conclusion."

11. What is Rule III?

If a term is distributed in the conclusion, then it must be distributed in the premises.

12. What does this rule prevent us from trying to do?

This rule prevents us from trying to say more in the conclusion than is contained in the premises.

13. What is the definition of distribution?

The application of a term of a proposition to the entire class that the term denotes. (If the term applies to EVERY member of the group discussed.)

14. With what does extension have to do?

How much a term refers to.

15. When we say that a term is distributed, what do we mean?

It is fully extended, meaning EVERY member is covered.

16. When we say that a term is undistributed, what do we mean?

The term does not cover every member.

17. In marking a syllogism, how do you show that a term is distributed?

Write a lower case d next to the term.

18. How do you show that a term is undistributed?

Write a lower case u next to the term.

____ Exercises for Section 2.

19. Fill in the following diagram showing which terms are distributed and which undistributed in different kinds of categorical statements:

DIAGRAM OF THE DISTRIBUTION OF TERMS IN A, I, E, AND O STATEMENTS

Type of sentence	Subject-Term	Predicate-Term	Categorical Statements
A	Distributed	Undistributed	All S are P
I	Undistributed	Undistributed	Some S are P
E	Distributed	Distributed	No S are P
O	Undistributed	Distributed	Some S are not P

20. Mark the following syllogisms indicating the minor, major and middle terms (using S, P and M, respectively) as in the text. Indicate whether the term is distributed or undistributed by writing a lower case **d** next to the letter that indicates the distributed term (S, P, or M), and a lower case **u** next to the letter that indicates the undistributed term. (Note that negative statements in which the subject-term is a proper noun are E statements. For example, "Jeff is not rude" is "No S is P," an E statement). Example:

All men^{Md} are mortal^{Pu}.
Socrates^{Sd} is a man^{Mu}.
Therefore Socrates^{Sd} is mortal^{Pu}

All kings^{MD} are good^{PU}
Hussein^{SD} is a king^{MU}
Therefore, Hussein^{SD} is good^{PU}

All boys^{MD} are human^{PU}
Nathaniel^{SD} is a boy^{MU}
Therefore, Nathaniel^{SD} is human^{PU}

No organisms^{MD} is simple^{PD}
Cats^{SD} are organisms^{MU}
Therefore, Cats^{SD} are not simple^{PD} **E claim**

No boys^{MD} are rude^{PD}
Jeff^{SD} is a boy^{MU}.
Therefore, Jeff^{SD} is not rude^{PD}

All Romans^{MD} are brave^{PU}
Caesar^{SD} is Roman^{MU}
Therefore, Caesar^{SD} is brave^{PU}

All cars^{MD} are fast^{PU}
A Corvette^{SD} is a car^{MU}
Therefore, a Corvette^{SD} is fast^{PU}

All generals^{MD} are great^{PU}
Hannibal^{SD} is a general^{MU}
Therefore, Hannibal^{SD} is great^{PU}

All horses^{MD} are strong^{PU}
Patches^{SD} is a horse^{MU}
Therefore, Patches^{SD} is strong^{PU}

No wars^{MD} are fun^{PD}
World War II^{SD} was a war^{MU}
Therefore, WWII^{SD} was no fun^{PD}

21. Syllogisms that violate Rule III are said to commit what fallacy?

The Fallacy of Illicit Process

22. In what two ways can this fallacy be committed?

The fallacy of Illicit Major and the Fallacy of Illicit Minor.

23. Explain the Fallacy of Illicit Major.

It occurs when the major term is distributed in the conclusion, but not in the major premise.

24. Explain the Fallacy of Illicit Minor.

It occurs when the minor term is distributed in the conclusion, but not in the minor premise.

25. **Make bold** the Rule that is violated in the following syllogisms. Indicate minor, major and middle terms (S, P and M) and whether the terms are distributed or undistributed (d and u) to help determine if Rule III is violated. If Rule III is violated, indicate which fallacy is committed, Illicit Major (IMj) or Illicit Minor (IMn). If no fallacy

is committed, then do not mark. Example:

All boys^{Md} are human^{Pu}
No girls^{Sd} are boys^{Md}
Therefore, no girls^{Sd} are human^{Pd}

■ Rule I ■ Rule II
■ Rule III ■ IMn ■ **IMj**

All towns^{M?D} are safe^{Pu}
Jerusalem^{SD} has high walls^{M?U}
Therefore, Jerusalem^{SD} is safe^{Pu}

■ **Rule I** ■ Rule II
■ Rule III ■ IMn ■ IMj

All victories^{MD} are glorious^{Pu}
No defeat^{SD} is a victory^{MD}
Therefore, no defeat^{SD} is glorious^{Pd}

■ Rule I ■ Rule II
■ **Rule III** ■ IMn ■ **IMj**

All Gorgons^{MD} have snakey hair^{Pu}
All Gorgons^{MD} are sisters^{SU}
Therefore, all sisters^{SD} have snakey hair^{Pu}

■ Rule I ■ Rule II
■ **Rule III** ■ **IMn** ■ IMj

All men^{MD} are animals^{Pu}
All men^{MD} are mortal^{SU}
Therefore, all mortals^{SD} are animals^{Pu}

■ Rule I ■ Rule II
■ **Rule III** ■ **IMn** ■ IMj

All Southerners^{MD} eat grits^{Pu}
No Yankee^{SD} is a Southerner^{MD}
Therefore, no Yankee^{SD} eats grits^{Pd}

■ Rule I ■ Rule II
■ **Rule III** ■ IMn ■ **IMj**

No boys^{MD} are cowards^{Pd}
All Latin students^{SD} are boys^{MU}
Therefore, no Latin students^{SD} are cowards^{Pd}

■ Rule I ■ Rule II

All Romans^{MD} are brave^{Pu}
No Gaul^{SD} is a Roman^{MD}
Therefore, no Gaul^{SD} is brave^{Pd}

■ Rule I ■ Rule II

■ Rule III ■ IMn ■ IMj

All cars^{M?D} are fast^{PU}
My car^{SD} is a Corvette^{M?U}
Therefore, my car^{SD} is fast^{PU}

■ Rule I ■ Rule II
■ Rule III ■ IMn ■ IMj

All girls^{SD} eat cookies^{M?U}
All girl scouts^{PD} sell cookies^{M?U}
Therefore, all girls^{SD} are girl scouts^{PU}

■ Rule I ■ Rule II
■ Rule III ■ IMn ■ IMj

■ Rule III ■ IMn ■ IMj

All generals^{MD} are great^{PU}
All generals^{MD} are brave men^{SU}
Therefore, all brave men^{SD} are great^{PU}

■ Rule I ■ Rule II
■ Rule III ■ IMn ■ IMj

All wars^{MD} are cruel^{PU}
No sports games^{SD} are wars^{MD}
Therefore, no sports games^{SD} are cruel^{PD}

■ Rule I ■ Rule II
■ Rule III ■ IMn ■ IMj

_____ Exercises for Section 3. Read “Rule IV: The Middle Term Must be Distributed at Least Once.”

26. Explain Rule IV.

The middle term makes the connection between the two premises, showing the identity between the major and minor terms. If the middle term is not distributed at least once, this connection is not made. The middle term must address ALL the members of either the major or the minor terms.

27. Syllogisms that violate Rule IV are said to commit what fallacy?

The Fallacy of Undistributed Middle

28. Explain the fallacy referred to in Question 27.

There is no connection between the major and minor terms.

29. Indicate which Rule is violated in the following syllogisms. Indicate minor, major, and middle terms (S, P, and M) and whether the terms are distributed or undistributed (d and u) to help determine which rules are violated. If Rule III is violated, indicate which fallacy is committed, Illicit Major (IMj) or Illicit Minor (IMn). If Rule IV is violated, indicate that it has committed the Fallacy of Undistributed Middle (FUM). If no fallacy is committed, then do not mark:

All Gorgons^{PD} have snakey hair^{MU}
Medusa^{SD} has snakey hair^{MU}
Therefore, Medusa^{SD} is a
Gogon^{PU}

All towns^{MD} are safe^{PU}
Jerusalem^{SD} is a town^{MU}
Therefore, Jerusalem^{SD} is
safe^{PU}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

No defeat^{PD} is glorious^{MD}
 All victories^{SD} are glorious^{MU}
 Therefore, no victory^{SD} is defeat^{PD}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

All queens^{PD} are good^{MU}
 All kings^{SD} are good^{MU}
 Therefore, all kings^{SD} are queens^{PU}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

All princes^{MD} are handsome^{PU}
 Some toads^{SU} are not princes^{MD}
 Therefore, some toads^{SU} are not handsome^{PD}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

All opera stars^{MD} sing songs^{PU}
 No sirens^{SD} are opera stars^{MD}
 Therefore, no sirens^{SD} sing songs^{PD}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

All heroes^{MD} are patriots^{PU}
 Charles Lindbergh^{SD} is a hero^{MU}
 Therefore, Charles Lindbergh^{SD} is a patriot^{PU}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

Some dull things^{MU} are valuable^{PU}
 All homework^{SD} is dull^{MU}
 Therefore, some homework^{SU} is valuable^{PU}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

Some merry men^{MU} live in Sherwood Forest^{PU}

All archers^{SD} are merry men^{MU}
 Therefore, some archers^{SU} live in Sherwood^{PU}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

Some great generals^{MU} defeated Rome^{PU}

Hannibal^{SD} was a great general^{MU}
 Therefore, Hannibal^{SD} defeated Rome^{PU}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

All Merry Men^{PD} are archers^{MU}
 Robin Hood^{SD} is an archer^{MU}
 Therefore, Robin Hood^{SD} is a merry man^{PU}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

All toads^{MD} are ugly^{PU}
 No princes^{SD} are toads^{MD}
 Therefore, no princes^{SD} are ugly^{PD}

- Rule I
- Rule II
- Rule III
- IMn
- IMj
- Rule IV:
- FUM

_____ Exercises for summary. Read "Summary." Read it carefully.

30. Indicate which Rule is violated in the following syllogisms. Indicate minor, major, and middle terms (S, P, and M) and whether the terms are distributed or undistributed (d and u) to help determine which rules are violated. If Rule III is violated, indicate which fallacy is committed, Illicit Major (IMj) or Illicit Minor (IMn). If Rule IV is violated mark 'FUN' (Fallacy of Undistributed Middle). If no fallacy is committed, then simply mark it valid.

Some green men^{MU} are leprechauns^{PU}
 Some green men^{MU} are Martians^{SU}
 Therefore, some Martians^{SU} are leprechauns^{PU}

- Rule I ■ Rule II
- Rule III ■ IMn ■ IMj
- **Rule IV:** ■ **FUM**

All towns^{M?D} are safe^{PU}
 Jerusalem^{M?D} is a holy city^{SU}
 Therefore, some holy cities^{SU} are safe^{PU}

- **Rule I** ■ Rule II
- Rule III ■ IMn ■ IMj
- Rule IV: ■ FUM

All leopards^{PD} are felines^{MU}
 All lions^{SD} are felines^{MU}
 Therefore, some lions^{SU} are leopards^{PU}

- Rule I ■ Rule II
- Rule III ■ IMn ■ IMj
- **Rule IV:** ■ **FUM**

Some rodents^{MU} are a threat^{PU}
 All mice^{SD} are rodents^{MU}
 Therefore, no mice^{SD} are a threat^{PU}

- Rule I ■ Rule II
- **Rule III** ■ IMn ■ **IMj**
- **Rule IV:** ■ **FUM**

All oaks^{MD} are trees^{PU}
 No maples^{SD} are oaks^{MD}
 Therefore, no maples^{SD} are trees^{PU}

- Rule I ■ Rule II
- **Rule III** ■ IMn ■ **IMj**
- Rule IV: ■ FUM

All kings^{MD} are good^{PU}
 All kings^{MD} are rich^{SU}
 Therefore, all rich people^{SD} are good^{PU}

- Rule I ■ Rule II
- **Rule III** ■ **IMn** ■ IMj
- Rule IV: ■ FUM

No irrational thing^{MD} is a man^{PD}
 All beasts^{SD} are irrational^{MU}
 Therefore, no beast^{SD} is a man^{PD}

- Rule I ■ Rule II
- Rule III ■ IMn ■ IMj
- Rule IV: ■ FUM **Valid**

No ducks^{PD} are birds^{MD}
 All birds^{MD} have feathers____
 Therefore, some **birds**^{SU} are not ducks^{PD}

- Rule I ■ **Rule II**
- Rule III ■ IMn ■ IMj
- Rule IV: ■ FUM

31. Tell whether the following are true or false: (Make the correct answer **bold**.)

- T** **F** If a term is distributed in the conclusion, it must be distributed in the premises.
- T** **F** The subject-term of an E statement is distributed.
- T** **F** Syllogisms that violate Rule IV are said to commit the Fallacy of Illicit Process.
- T** **F** The Fallacy of Illicit Major is committed when the major term is distributed in the conclusion, but not in the premises.
- T** **F** If the middle-term is not distributed in either of the premises, then the syllogism is invalid.
- T** **F** The Fallacy of Undistributed Middle is committed when the middle term is distributed in the premises but not in the conclusion.