

# Introductory Logic

Homework #9

Read pages 57-60 in the text. Define the following, *using the text*:



- Schema –
- Mood of a syllogism –
- Figure of a syllogism –

For practice, determine the form (mood and figure) of the following syllogisms. Remember to put them in standard order if they are not already. Check your answers.

1. All men are sinners. \_\_\_\_\_  
 No sinners are men who deserve eternal life.  
 Therefore, no men are men who deserve eternal life.
2. No felines are dogs. \_\_\_\_\_  
 Some pets are dogs.  
 Therefore, some pets are not felines.

Answers: 1. AEE-4 2. EIO-2

If you had any trouble with the practice, reread the assigned text pages. Otherwise, go on.

Exercise Sixteen (page 60):

1. \_\_\_\_\_ 2. \_\_\_\_\_ 3. \_\_\_\_\_ 4. \_\_\_\_\_
5. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
6. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
7. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_
8. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_





Read pages 61-64 in the text. Define the following, *using the text*:

● Counterexample –

For practice, read the following syllogism and find the counterexample for that syllogism. (Hint: It always helps to start by writing the syllogism in categorical form.) Check your answer.

Some Socratic sages are not perspicacious people, since some Socratic sages are metaphorical masters, and some perspicacious people are also metaphorical masters.

1. Some dogs are pets. Some pets are cats. Therefore, some cats are not pets.
2. Some birds are not predators. Some preys are birds. Therefore, some birds are prey.
3. Some homo sapiens are mammals. Some humans are mammals. Therefore, some humans are not homo sapiens.
4. Some rats are not females. Some rats are males. Therefore, some females are males.

Counterexample: #3 (IIO-2)

If you had any trouble with the practice, reread the assigned text pages. Otherwise, go on.

Exercise Seventeen (pages 63-64):

1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

6. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Note: You do not have to do the challenge; however, it would give you great practice and would be worthwhile to at least do a few. You do not need to turn in your practice work.

## Cranium Calisthenics

Can you deduce the mystery number from the clues below?\*

- It is a three-digit, whole number.
- Its tens digit is 5.
- It is divisible by 4.
- It is divisible by 9.
- Each of its digits is different.
- Its ones digit is greater than its tens digit.
- Its hundreds digit is greater than its ones digit.
- It is less than 800.
- It is divisible by 7.
- Its ones digit is 6.



What is the number? \_\_\_ \_ \_

(Try to solve this on your own. If you need help, use the Number Problems help on the CC hints page of the website.)

\* Cranium Calisthenics taken from *Logic Number Problems*, Wade Sherard III. Dale Seymour Publications, 1987. Reprinted with permission.  
\* From *The Riddle of Scheherazade and Other Puzzles*, Smullyan. Knopf, 1997.  
Shelli Wanvig - \school\logic\homework\Logic\_HW#6