

## Exercises for Reading 2.04

\_\_\_\_\_ Exercises - Part I. Peruse entire reading. Then read the introductory section at the very beginning of the reading. Read this section carefully and try to understand it as best you can.

1. Explain each of the four methods of reduction. [Review]
2. What is the reason for reducing syllogisms to the First Figure in the first place?
3. Which two moods cannot be reduced to the First Figure by using Direct Reduction?
4. Which of the four operations (S, P, M, and C) do you use in Indirect Reduction?

**Read: "Indirect Reduction." Read it carefully.**

5. Why is Reduction by Contradiction considered indirect rather than direct?
6. What is the principle upon which Indirect Reduction is based?
- 7 Under this method, if a syllogism is valid, what should we expect?

\_\_\_\_\_ Exercises - Part 2. Read: "Indirect Reduction of BAROCO." Read it carefully.

8. In the example BAROCO given in the readings, if we say that all animals are rational creatures (thereby contradicting the conclusion of the original syllogism), what should we be able to derive at the end of our process of Indirect Reduction?
9. In BAROCO, which premise do we replace with the contradiction of the conclusion?
10. When the operation indicated in question 10. is completed, what statement do we have as our new conclusion?
11. What does this show?
12. Fill out the following chart:

	Affirmative	Negative
Universal	_____	_____
Particular	_____	_____

13. Which two sets of statements contradict one another?

14. In the example BAROCO in the readings, what should the new conclusion be (i.e. what kind of statement, A, E, I, or O)? Why?

15. What reasoning do we use in this procedure?

16. Give the three steps for the Indirect Reduction of BAROCO.

17 Indirectly Reduce the following syllogisms:

All tabbies are cats  
 Some animals are not cats  
 Therefore, some animals are not tabbies

All Morgans are horses  
 Some animals are not horses  
 Therefore, some animals are not Morgans

\_\_\_\_\_ **Exercises - Part 3. Read section titled "Indirect Reduction of BOCARDO."**  
**Read it carefully.**

18. In the example BOCARDO given in the readings, if we say that ***all things created by God are rational*** (thereby contradicting the conclusion of the original syllogism), what should we be able to derive at the end of our process of Indirect Reduction?

19. In BOCARDO, which premise do we replace with the contradiction of the conclusion of the original syllogism?

20. If this is done, what is the statement that you should get as your new conclusion?

21. What does this show?

22. Generally speaking, is the reasoning we use in this procedure any different from what we used with BAROCO?

23. Give the three steps for the Indirect Reduction of BOCARDO.

24. Indirectly Reduce the following syllogisms:

Some cats are not tabbies  
All cats are animals  
Therefore, some animals are not tabbies

Some horses are not Morgans  
All horses are animals  
Therefore, some animals are not Morgans

**Create a syllogism in each of the 19 valid moods (you may use the same three terms in all the syllogisms if you wish). In doing so, follow this five-step procedure:**

**Step #1: Construct your conclusion first. Make sure you include the quantifier, a clearly expressed subject and predicate, and copula.**

**Step #2: Given the vowels in the name of the argument place the quantifiers at the beginning of the first two lines where you intend to put your premises.**

**Step #3: Determine the figure of the syllogism you are trying to construct, and place a space (you can use an underline if you wish) where the middle term should appear in the two premises, according to what figure it is in.**

**Step #4: Identify the minor and major terms (from the conclusion you have already written) and place them in the proper location in the premises**

**Step #5: Fill in the blanks you left for your middle term with a term that makes the best sense in light of your minor and middle terms.**

**Example:** Let's say we want to create a BARBARA. We apply **step # 1** and write our conclusion:

All daisies are plants

We apply **step #2** and place the quantifiers, both of which in this case are all, since the first two vowels in

BARBARA are **A's**:

All  
All  
Therefore, all daisies are plants

According to **step #3**, then, we conclude that BARBARA is a First Figure syllogism, which means that the middle term is the subject of the major premise and the **predicate** of the minor premise. Therefore, we place a space indicating where the middle term should go:

All \_\_\_\_\_ are \_\_\_\_\_  
All \_\_\_\_\_ are \_\_\_\_\_  
Therefore, all daisies are plants

Then, applying **step #4**, we identify the **minor** term (the subject of the conclusion: **daisies**) and the **major** term (the predicate of the conclusion: **plants**) and place them in the appropriate spot in the premises:

All \_\_\_\_\_ are plants  
All daisies are \_\_\_\_\_  
Therefore, all daisies are plants

Finally, we apply **step #5** by selecting an appropriate middle term and placing it in both of the blank spaces:

All flowers are plants  
All daisies are flowers  
Therefore, all daisies are plants

This gives us a BARBARA. Now, try it on the following:

- |               |               |
|---------------|---------------|
| 25. BARBARA   | 26. CELARENT  |
| 27. DARII     | 28. FERIO     |
| 29. CESARE    | 30. CAMESTRES |
| 31. FESTINO   | 32. BAROCO    |
| 33. DARAPTI   | 34. DISAMIS   |
| 35. DATISI    | 36. FELAPTON  |
| 37. BOCARDO   | 38. FERISON   |
| 39. BRAMANTIP | 40. CAMENES   |
| 41. DIMARIS   | 42. FESAPO    |
| 43. FRESISON  |               |

\_\_\_\_\_ Exercises - Part 4 Indirectly reduce the following syllogisms (identify the mood, replace the O premise with the contradiction of the conclusion, and come up with the new conclusion):

44. All Athenians live in Greece.

Some Greeks do not live in Greece.  
Therefore, some Greeks are not Athenians

45. Some Dorians are not Spartans .  
All Dorians are Greeks.  
Therefore, some Greeks are not Spartans .

46. All Macedonians are barbarians .  
Some Athenians are not barbarians.  
Therefore, some Athenians are not Macedonians.

47. Some laws are not written.  
All laws are to be obeyed.  
Therefore, some things to be obeyed are not written.

48. All Spartans are soldiers.  
Some Greeks are not soldiers.  
Therefore, some Greeks are not Spartans .

49. Take the syllogism that you thought up for FESTINO and directly reduce it to the appropriate First Figure mood.

50. Take the syllogism you thought up for DATISI and directly reduce it to the appropriate First Figure mood.

51. Take the syllogism you thought up for BRAMANTIP and directly reduce it to the appropriate First Figure mood.

52. Take the syllogism you thought up for CESARE and directly reduce it to the appropriate First Figure mood.

53. Take the syllogism you thought up for BAROCO and indirectly reduce it.

54. Take the syllogism you thought up for BOCARDO and indirectly reduce it.  
Read section titled, "Summary." Read it carefully.

55. Tell whether the following are true or false:

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- T F The two moods in which Direct Reduction does not work are BARBARA and BAROCO.
- T F In those cases in which Direct Reduction cannot be used, we must use Indirect Reduction.
- T F The reason we reduce figures to the First is in order to more easily show them valid.
- T F We indirectly reduce a syllogism by replacing the O premise with the contradiction of the original conclusion.
- T F In Indirect Reduction, if the contradiction of the major premise also contradicts the contradiction of the minor premise, then the syllogism contradicts itself.