Introduction to Logical Reasoning

Problem Set #4

Although I strongly suggest that you write out answers to all these problems, *you do not have to turn in any written responses*. You do, however, need to be prepared to do these types of problems, for *questions on the weekly quizzes and exams will primarily be drawn from the problem sets*. The solutions to these problems will be provided, so you can check your own work and seek help from me as necessary.

We will devote considerable time to these problems during the next in-class workshop. In order to make that workshop productive, please make a solid start on them. That way we can use the workshop to look at the problems that presented the most difficulties.

If you do the Extra Credit Logic Puzzle, you must turn in your *type-written* solution at the *beginning* (i.e., within the first ten minutes) of class on Sunday, February 6th.

Instructions

Each of the following problems presents an argument. For each, (a) rewrite the premises and conclusion in complete, independent sentences, and (b) arrange these into an argument map that faithfully represents the argument as given.

For each argument map, put boxes around the statements and use arrows to indicate inferential support, arranging these in a clear way that is visually easy to follow. Remember that there is a difference between (a) two claims that must be used together to support another claim and (b) two claims that separately support another claim.

Problems

Do the problems on pages 48–53 from the Irving M. Copi and Carl Cohen handout on "Diagramming Arguments".

Note: There may a lot of exercises here. Do not feel obligated to do all of them. I often assign many exercises so that you have plenty of opportunities to practice the skills these exercises are trying to impart. I suggest doing just enough of them so that you are confident that you could use these skills on a quiz or an exam.

Extra Credit Logic Puzzle (Hard)

The piloting crew on the Qatar Airways flight to Washington, D.C. consists of the pilot, the co-pilot, and the navigator. Their names listed alphabetically are Ayah, Hafsa, and Rayhan. Among the cabin (non-piloting) crew on this plane, there are also three flight attendants with corresponding names, Ms. Ayah, Ms. Hafsa, and Mr. Rayhan. The following facts are known:

- 1. Mr. Rayhan lives in Doha.
- 2. The pilot lives halfway between Doha and Medina.
- 3. Ms. Hafsa earns exactly QR 40,000 a year.
- 4. Ayah once beat the co-pilot at tennis.
- 5. The pilot's next-door neighbor is one of the three flight attendants mentioned, and this neighbor earns precisely three times as much money as the pilot.
- 6. The flight attendant living in Medina has the same name as the pilot.

Question: What is the pilot's name? What is the co-pilot's name? What is the navigator's name?

To receive any credit you must justify your answer with a logical argument showing why you are 100% right. That is to say, this question has a definitive answer that can be justified without *any* guessing on your part.