Introduction to Logical Reasoning

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Problem Set #2

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, January 23rd.

Instructions

Each of the following problems presents an argument. For each, (i) circle and denote with a C the argument's main conclusion; (ii) underline and number each premise and sub-conclusion (if any); (iii) underline any conclusion indicators; and (iv) circle any premise indicators.

Problems

> **Part A:** Do arguments 1 and 8–16 in Exercise 1.3 on pages 23–24 from *The Power of Critical Thinking* by Lewis Vaughn.

> **Part B:** Do arguments 1, 2, 4, 6, 9, and 11 in Exercise 1.4 on pages 24–25 from *The Power of Critical Thinking* by Lewis Vaughn.

> **Part C:** Do arguments 1–4 in Exercise 1.7 on pages 27–28 from *The Power of Critical Thinking* by Lewis Vaughn.

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)

There has been a murder on the Qatar Airways flight to Washington, D.C.! This was a training flight, so the only people on the plane were the flight crew, consisting of Rayhan, Mohammed, Ayah, Hafsa, and Reema. The following statements are known to be true:

1. One of the flight crew shot and killed one of the other five.
2. The murderer is Reema's sibling. They grew up together in Doha.
3. Hafsa used to smoke sheesha heavily.
4. Mohammed is a topnotch pilot and wants to fly Rayhan's new small airplane.
5. Ayah considered being a camel breeder in Egypt before she moved to Doha a few months ago.
6. The murderer had his or her leg amputated two days ago.
7. Rayhan met Reema for the first time two months ago.
8. Rayhan and Mohammed once flew Rayhan's old plane together.
9. Reema has been in seclusion since the crime.
10. Hafsa biked from Doha to Dukhan back to Doha yesterday with one of the innocent persons.

Question: Which **one** of the group committed the murder? Who one was the murder victim?

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.