

Introduction to Logical Reasoning

Problem Set #12

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 types of problems during the next in-class workshop. In order to make that workshop productive, please make a solid start on them. That way you can use the workshop to address the difficulties you are facing.

If you do the extra credit logic puzzle, you must turn in a computer-type-written solution at the beginning of class on Monday, November 28th.

Parts A, B, and C Instructions

Each of the following problems presents a categorical statement. For each, (1) state the subject and predicate, (2) identify the statement's logical form, (3) draw its Venn diagram, labeling the parts, and (4) state the proposition's quality and quantity.

Problems

Part A: Do the statements in Exercise 7.1 on page 255 from *The Power of Critical Thinking* by Lewis Vaughn.

Part B: Do the statements in Exercise 7.2 on page 263 from *The Power of Critical Thinking* by Lewis Vaughn.

Part C: Do the statements in Exercise 7.4 on page 268 from *The Power of Critical Thinking* by Lewis Vaughn.

Part D Instructions

Each of the following problems presents a set of four categorical statements. If you know that the first one in each set is *true*, what can you say about the other three in that set: are they true, false, or undetermined? If you know that the first one in each set is *false*, what can you say about the other three in that set: are they true, false, or undetermined?

Problems

Part D: Do problems 1–4 on page 198 in the Irving Copi and Carl Cohen handout on "The Traditional Square of Opposition".

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

Austin Powers, international man of mystery, was shot, killed, and vaporized with a laser ray gun by a criminal syndicate because he almost had enough evidence to shut it down. After considerable effort on the part of Interpol, five suspects were brought before the lead detective of Scotland Yard, who asked them what they had to say for themselves. Each suspect made three statements, exactly two of which are true and exactly one of which is false. Their statements were:

Dr. Evil: I did not kill Powers. I never owned a laser gun in all my life. The Frau did it.

Number Two: I am innocent. I never saw Mini Me before. The Frau is guilty.

Mini Me: I did not kill Powers. Fat Man is the guilty one. Number Two and I are old pals.

Fat Man: I did not kill Powers. I never owned a laser gun. The others are all blaming someone else for the murder.

The Frau: I am innocent. Mini Me is the guilty one. Dr. Evil did not tell the truth when he said that I did it.

Question: Who murdered Austin Powers?

To receive full 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.