

NAME: _____

Philosophy 1104: Critical Thinking

Answers to Practice Quiz #5

[Total: 40 marks]

1. For each of the following arguments identify the *type* of inference (modus ponens, affirming the consequent, modus tollens, denying the antecedent, or a disjunctive argument) and say whether or not it is deductively *valid*. [Note that valid conclusions are *conclusively proved* by the premises, not just supported to some extent.] [2 marks each]

- (i) I made myself very clear: You can go to the beach only if you finish your homework. You have not finished your homework. So, I'm afraid, you cannot go to the beach.

Type: modus ponens or modus tollens Valid? Yes

- (ii) Don't worry, you'll pass the exam. After all, people who don't study will fail, but you studied quite a bit.

Type: denying the antecedent Valid? No

- (iii) Yes, global warming is real! If it's real, then we ought to see an increase in extreme weather, such as storms, floods, droughts, and so on. And that's happening right now.

Type: affirming the consequent Valid? No

2. At a certain bank, money has often gone missing, and the branch manager suspects that one of her employees is stealing it. She compiles the following table, showing which of her five employees were at work each day, and the amount of money that went missing that day.

	March 4	5	6	7	8	11	12
Jan	✓		✓	✓		✓	✓
Mike		✓	✓	✓	✓	✓	
Hazel	✓	✓		✓	✓		✓
Curtis	✓	✓		✓	✓	✓	
Dan	✓		✓		✓	✓	✓
	\$210	\$0	\$0	\$90	\$130	\$0	\$75

The branch manager asks you to analyse this table using Mill's methods, and tell her who is probably stealing the money. What do you tell her? Briefly explain your answer, specifying which of Mill's methods you used.

Hazel was present every day when money went missing, and she is the only such person. So the method of agreement suggests that Hazel is the thief. [4 marks]

3. According to William P. Castelli, M.D., the director of the Framingham Heart Study, Seventh Day Adventists—whose religion requires them to be vegetarians, to exercise regularly, and not to use alcohol, caffeine or tobacco products—live about 6 years longer than other US citizens.

- (i) What conclusions concerning causes and effects can you conclude from this?

Six years is a huge difference, so there must be something about the lifestyle of SDAs that causes them to live longer. But they differ from the general population in so many ways that it's hard to pin down a unique cause. [3 marks]

- (ii) What further study might you undertake in order to reach more definite conclusions?

One could compare SDAs with other groups that share just *one* of their characteristics, e.g. with vegetarians, non-smokers, people who exercise regularly, and so on. This might help to isolate the relevant factor(s). (Of course, just conceivably, being SDA might *itself* be a factor!) [2 marks]

4. During World War I, the U.S. Navy pointed out in its recruiting literature that the death rate among sailors in the Navy during the Spanish-American War was only 865 per 100,000, which is lower than among the residents of New York during the same period, i.e. 922 per 100,000.

- (i) What (would you guess) is the conclusion of the Navy's argument?

Being in war isn't a cause of death (or not too strong a causal factor). [1 mark]

- (ii) Which of Mill's methods does the Navy seem to be using here?

The method of agreement, or method of difference. (Sorry, bad question!). The point is that being in a war doesn't increase the death rate. [2 marks]

- (iii) Is the Navy's conclusion justified by this evidence? Briefly explain your answer.

No, for there are further differences between sailors and people in NYC. The sailors are much younger and healthier on average. [3 marks]

5. Criticise the following arguments from analogy by finding the most relevant difference(s).

(i)

Micki: Have you ever had sheep tripe soup?

Darrell: Yes, once, but never again! It was awful!

Micki: You'd try a bowl of *my* tripe soup if I made some, wouldn't you?

Darrell: That's like asking a man who's broken his right leg whether he'll allow you to break his left leg, so he can find out if it hurts as much as the first one!

Soups can vary quite a bit, depending on who makes them, whereas broken limbs are all likely to hurt a lot. Also, eating bad soup involves only minor, brief suffering.

[3 marks]

(ii) I know you think that medical students should be able to re-take exams they fail, but think about it. After they become doctors, they'll be operating on real patients. If they mess up an operation, and the patient dies, can they re-take the operation?

No third party is (directly) hurt when a student fails an exam. So, even if allowing re-takes encourages students to fail the first time, this might not be a problem.

[3 marks]

(iii) Living organisms are fantastically intricate and complex, like human artefacts but even more so. The human eye, for example, is just like a video camera, but of extraordinary quality. It has automatic focusing and exposure adjustment, and is extremely high definition. It's even self-repairing, which is pretty neat. Now video cameras are designed by engineers, of course, so there's good evidence that eyes were also designed by someone.

Living organisms, unlike artefacts such as cameras, reproduce themselves. This might, at least, be a relevant difference. [3 marks]

6. For each of the following, comment on the use of statistics, pointing out any flaws.

(i) Jack has just moved to a new city, and is complaining about the weather. "It's just so harsh, so extreme," he moans. A local, somewhat offended, retorts that the year-round average temperature is a very comfortable 17 Celsius.

This point fails to address Jack's point. It may be, for example, that the temperature is 35 Celsius in summer and -20 in winter, so that the actual temperature is never comfortable. [2 marks]

- (ii) I wouldn't take anti-depressants if I were you. A recent study showed that people on anti-depressants have much higher rates of suicide than those who are not.

People taking anti-depressants do so because they are depressed, and depression is a positive causal factor for suicide. So we have a common cause here – the drugs aren't causing suicide. [2 marks]

- (iii) Campbell isn't going to survive the next election. We did a survey, and only 24% of people agreed with the statement "Gordon Campbell, a convicted criminal, is the right person to lead our province"

The question is slanted – against Campbell – so the survey is unreliable. [2 marks]

- (iv) Some people claim that the new study by Qiu and Hudson totally refutes the old Bennett study. But this is ridiculous. Bennett looked at over 10,000 cases, whereas Qiu and Hudson's sample included only 2,100 cases.

A large sample size is good in itself, but doesn't guarantee a good study. So the new study may well be much more reliable than the old one. [2 marks]

- (v) A lot more men are gay than is commonly realised. A study of 1,300 men in Canadian prisons shows that more than 25% of them have at least one homosexual encounter per year.

It isn't a random sample, since only prisoners are sampled. The prison population may be different from the general population in this respect, especially since it is an all-male community. [2 marks]