

Metaphysics: Problem set 1

January 22

due date: January 29

1. Valid or invalid? If valid, briefly explain why (one sentence); if invalid, provide an argument of the same form with true premises and a false conclusion.

- (a) If a force is applied to any body, it accelerates. No force is being applied to my car. Therefore it is not accelerating.
- (b) Either you will go to heaven when you die, or you will go to hell. If you go to heaven when you die, your soul is immortal. If you go to hell when you die, your soul is immortal. Therefore your soul is immortal.
- (c) If anyone gets full marks on this test, Anna will. Anna will get full marks on this test. Therefore, someone will get full marks on this test.
- (d) The winner of the 1992 election is not the winner of the 2000 election. The winner of the 2000 election is not the winner of the 1988 election. Therefore, the winner of the 1988 election is not the winner of the 1992 election.
- (e) If there are any dogs in the dog run, one of them is a Labrador. If there are any dogs in the dog run, one of them is not a Labrador. Therefore, it is not the case that there is exactly one dog in the dog run.
- (f) It's possible that the moon is made of green cheese. It's possible that Mars is made of chocolate. Therefore, it's possible that the moon is made of green cheese and Mars is made of chocolate.

2. True or false? Justify each answer with an argument (one sentence) if the answer is 'true', with a counterexample if the answer is 'false'.

- (a) If a sentence doesn't follow from another, its denial must.
- (b) If a sentence doesn't follow from another, its denial can't.
- (c) If P follows from Q, then the denial of P follows from the denial of Q.
- (d) If P follows from Q, then the denial of Q follows from the denial of P.
- (e) If a set of sentences is consistent, each member must be.
- (f) If each member is consistent, then the set must be.
- (g) You can't make a valid argument invalid by adding premises.
- (h) You can't make an invalid argument valid by removing premises.
- (i) If an argument is valid, the set of premises must be consistent.
- (j) If P follows from Q, then 'If P, then Q' is logically true.
- (k) If a set of sentences is inconsistent, then any set of sentences which is exactly the same as the first one except that one sentence is replaced with its denial must be consistent.
- (l) If a set of sentences is inconsistent and has no inconsistent proper subsets, then any set of sentences which is exactly the same as the first one except that one sentence is replaced with its denial must be consistent.

3. Make the following invalid arguments deductively valid by adding one extra premise, as short as possible.

- (a) The murder was committed by someone who was in the house. But everyone who was in the house except for the butler had an alibi. Therefore, the murder was committed by the butler.
- (b) All men are mortal. Therefore, some poets are mortal.
- (c) Mark Twain wrote novels. Therefore Samuel Clemens wrote novels.
- (d) Necessarily, if there is a God then the world is as perfect as it could possibly be. Therefore it is necessary that there is no God.

4. The following passage contains an argument. Express this argument in the form of a list of premises and a conclusion which validly follows from them. NB: to do this, you must depart considerably from the structure of the passage: some bits of the passage won't correspond to anything in your argument, and some bits of your argument won't correspond to anything that is explicitly stated in the passage.

If there is a God, then he is omnipotent and perfectly good. But the hypothesis that such a being exists can be shown to be incompatible with the existence of natural evils—events like earthquakes and hurricanes that cause pain and suffering even though they don't occur as a result of the actions of human beings. For an omnipotent being is able to prevent such evils, and a perfectly good one would prevent them if he could. So there is no God.