

Math 2534 In Class work Logic Arguments

- 1) If today is Tuesday, then I have a test in Discrete Math or a test in Physics. If my professor is sick, I will not have a test in Physics. Today is Tuesday and my professor is sick. What is your conclusion?

- 2) If it does not rain or if it is not foggy, then the sailing race will be held and the life saving demonstration will go on. If the sailing race is held, then a trophy will be awarded. No trophy was awarded. What is your conclusion?

- 3) Solve the murder.
 - a) Lord Hazelton was killed by blow on the head by a brass candlestick.
 - b) Either Lady Hazelton or the maid, Sarah, was in the dining room at the time of the murder.
 - c) If the cook was in the kitchen at the time of the murder, then the butler killed Lord Hazelton with a fatal dose of strychnine.
 - d) If Lady Hazelton was in the dining room at the time of the murder, then the chauffeur killed Lord Hazelton.
 - e) If the cook was not in the kitchen at the time of the murder, then Sarah was not in the dining room when the murder occurred.
 - f) If Sarah was in the dining room at the time of the murder, then the wine steward killed Lord Hazelton.

- 4) Determine if the conclusion is valid.
 - a) If I eat ice cream, then, if the ice cream is chocolate, I eat a lot.
 - b) I eat ice cream or I eat cake
 - c) If there is ice cream in my freezer, then it is chocolate.
 - d) I don't eat cake.

Therefore if I don't eat a lot, then there is not any ice cream in my freezer.

- 5) Determine If the following conclusion is valid.
 - a) I am happy if my program runs.
 - b) My happiness is necessary for me to enjoy CS.

Therefore if my program runs, then, if I enjoy CS, then I am happy.

Puzzles Lewis Carroll

Determine the conclusion for each argument below.

Puzzle 1:

- 1) Everyone who is sane can do logic.
- 2) No lunatics are fit to serve on a jury.
- 3) None of your sons can do logic.
- 4) \therefore _____

Puzzle 2:

- 1) No ducks waltz.
- 2) No officers ever decline to waltz.
- 3) All my poultry are ducks.
- 4) \therefore _____

Puzzle 3:

- 1) No one takes the Times, unless he is well educated.
- 2) No hedge-hog can read.
- 3) Those who cannot read are not well educated.
- 4) \therefore _____

Puzzle 4:

- 1) All the old articles in this cupboard are cracked.
- 2) No jug in this cupboard is new.
- 3) Nothing in the cupboard, that is cracked, will hold water.
- 4) \therefore _____