

CS 100 - Homework 5

Deadline:

Due by 11:59 pm on Friday, September 28

How to submit:

- Go to the course Moodle site.
 - (either log into myHumboldt and click the Moodle button in the upper right corner,
 - or get to it via learn.humboldt.edu,
 - ...and then click the "my moodle" button in the upper right under the big yellow moodle logo to get your list Moodle course sites,
 - or follow the link from the public course web site, users.humboldt.edu/smtuttle/f12cs100)
- Once you are at the course Moodle site, find the section titled "Submit your HOMEWORK FILES here",
 - and click on the link "Click HERE to submit Homework 5".
- You should see, in the middle of the page, a place where you can upload your homework file.
 - Note that I believe I set this up to permit multiple submissions. I couldn't set it to "unlimited", because the largest number available was 20, but that seems like it should be ample.
 - Also note that I will grade the latest file submitted before the deadline unless you e-mail and tell me otherwise.

Purpose:

To get practice in recognizing common deductive and inductive argument patterns, and to get practice in distinguishing between deductive and inductive arguments.

Important notes:

- Type:
 - your name, then
 - the problem number and your answer for each of the following questions,
 - into a file named `cs100hw5` (optionally followed by your name, including only letters and underscores -- NO blanks or other unusual characters)
 - Its format may be `.txt`, `.odt`, `.pdf`, `.doc`, `.docx`, or `.jpg`. (Please ask me before submitting files of other formats -- for example, please do not submit `.pages` documents, because our grader cannot read them.)

- It is possible that your answers may be compiled and posted to the course Moodle site.

The Problems:

Problem 1:

Consider Exercise 3.2 in the course textbook, on p. 65.

Each of the arguments in this exercise or written out below is a hypothetical syllogism. Your task is to indicate which type it is:

- *modus ponens*
- *modus tollens*
- chain argument
- denying the antecedent
- affirming the consequent

For each of the specified arguments, indicate which type of hypothetical syllogism it is. (**NOTE** that in some cases, the argument may need slight REPHRASING to make the logical pattern explicit.) Put the Problem 1 part number, then your answer.

For example, for the argument:

Ex-1. Argument 4 ("If we're in Paris...")

you could answer:

Ex-1. chain argument

1-1. Exercise 3-2, Argument 2 ("If we're in Los Angeles...")

1-2. Exercise 3-2, Argument 3 ("If we're in the United States...")

1-3. Exercise 3-2, Argument 5 ("If we're in Houston...")

1-4. Exercise 3-2, Argument 6 ("If we're in Shanghai...")

1-5. Exercise 3-2, Argument 8 ("Since we're in India...")

1-6. Exercise 3-2, Argument 9 ("If we're in Toronto...")

1-7. If Thomas was born in California, Thomas would be a Californian. Thomas is not a Californian. Therefore, Thomas was not born in California.

Problem 2:

Consider Exercise 3.3 in the course textbook, on pp. 71-72. (Although I am "using" it a bit differently...)

Each of the arguments below from this exercise happens to be **deductive**. Your task is to indicate which common deductive pattern it uses:

- hypothetical syllogism: *modus ponens*
- hypothetical syllogism: *modus tollens*
- hypothetical syllogism: chain argument
- hypothetical syllogism: denying the antecedent
- hypothetical syllogism: affirming the consequent
- categorical syllogism
- argument by elimination
- argument based on mathematics
- argument from definition

For each of the specified arguments, indicate which type of deductive pattern is used. Put the Problem 2 part number, then your answer.

For example, for the argument:

Ex-1. Argument 1 ("Because $x = 3...$ ")

you could answer:

Ex-1. argument based on mathematics

2-1. Exercise 3-3, Argument 8 ("Joan is...")

2-2. Exercise 3-3, Argument 9 ("All inductive...")

2-3. Exercise 3-3, Argument 17 ("If my car...")

2-4. Exercise 3-3, Argument 20 ("This tree is...")

2-5. Exercise 3-3, Argument 25 ("If Steve is...")

Problem 3:

Again consider Exercise 3.3 in the course textbook, on pp. 71-72. (Although I am again "using" it a bit differently...)

Each of the arguments below from this exercise happens to be **inductive**. Your task is to indicate which common inductive pattern it uses:

- inductive generalization
- predictive argument
- argument from authority
- causal argument
- statistical argument
- argument from analogy

For each of the specified arguments, indicate which type of deductive pattern is used. Put the Problem 3 part number, then your answer.

For example, for the argument:

Ex-1. Argument 10 ("If it rains...")

you could answer:

Ex-1. argument from authority

- 3-1. Exercise 3-3, Argument 2 ("According to...")
- 3-2. Exercise 3-3, Argument 3 ("Seventy-three...")
- 3-3. Exercise 3-3, Argument 6 ("There are no visible...")
- 3-4. Exercise 3-3, Argument 14 ("Klaus ingested...")
- 3-5. Exercise 3-3, Argument 15 ("All previously observed...")
- 3-6. Exercise 3-3, Argument 18 ("Yale is an...")
- 3-7. Exercise 3-3, Argument 23 ("Five alleged...")
- 3-8. Exercise 3-3, Argument 24 ("Tiger Woods...")

Problem 4:

(adapted from the textbook instructor's materials)

For each of the following arguments, indicate whether it is best interpreted as deductive or inductive. Put the Problem 4 part number, then your answer.

- 4-1. Most days in the year are weekdays (as opposed to weekends). There will come a day when a huge asteroid strikes the earth. Thus, the day a huge asteroid strikes the earth will likely be a weekday.
- 4-2. That Delbert Johnson is not a singer follows from the following facts: (a) all singers can carry a tune, and (b) Delbert Johnson cannot carry a tune.
- 4-3. So far, no one has ever swum the Atlantic Ocean non-stop—or even come remotely close to doing so. It is unlikely in the extreme, therefore, that anyone taking this test will swim the Atlantic Ocean non-stop.
- 4-4. Dudley expects to get thirty miles to a gallon from the car he bought last week, but that's crazy. The car is a 1975 Belchfire with twelve cylinders and a 480 horsepower engine, and it needs a tune-up.
- 4-5. If a person's destiny were determined by the astrological sign under which he or she is born, then all persons born under a particular sign would have the same destiny. But homeless persons and millionaires, paupers and presidents are born under the same sign—i.e., people born under the same sign have strikingly different destinies. It follows that a person's destiny is not determined by the astrological sign under which he or she is born.
- 4-6. Leon and Leslie have five children, all boys. It is almost certain, therefore, that the child they are

now expecting will be a girl.

- 4-7. Dusty Rhode drives a beat-up old Volkswagen, lives in a cheap apartment, and wears shabby, threadbare clothes. It's a good bet that Dusty does not have much money.
- 4-8. The Eiffel Tower is in London. London is in Germany, which is north of the Arctic Circle. It follows that the Eiffel Tower is north of the Arctic Circle.
- 4-9. All cobras are poisonous snakes, and all poisonous snakes are dangerous. It follows that all cobras are dangerous.
- 4-10. The human mind has no size, no shape, and no spatial location. The human brain has size, shape, and spatial location. Two entities are identical only if they have all properties in common. Therefore, the human mind and the human brain are not identical.

Problem 5 - BONUS PROBLEM - worth up to 10 bonus points

Good examples submitted for this problem may be posted to the course Moodle site. They will be posted anonymously **unless** you indicate explicitly that you would like your name included if yours is chosen to be posted.

5 part a

Find a deductive argument using one of the common deductive patterns from a newspaper, a magazine, or a news web site. Include:

- the argument
- which pattern you think it uses
- the newspaper or magazine or news web site's name
- the date of the newspaper/magazine, title, and page number of the article it is from (for a newspaper or magazine source)
- the URL/web address of the page containing it (for a news web site)

5 part b

Find an inductive argument using one of the common inductive patterns from a newspaper, a magazine, or a news web site. Include:

- the argument
- which pattern you think it uses
- the newspaper or magazine or news web site's name
- the date of the newspaper/magazine, title, and page number of the article it is from (for a newspaper or magazine source)
- the URL/web address of the page containing it (for a news web site)