

Name:

Due Monday, September 15

## Homework 2

Do the following problems on a separate sheet of paper.

Additional suggested problems:

1D: 4, 5, 25-32, 33, 36, 39-46, 47-48, 55-56

2A: 29-32, 37-42, 57-58, 65-68, 83, 86, 94

1. Determine if each of the following is an inductive or deductive argument. Don't worry about whether it is valid or not – just if it is inductive or deductive!
  - (a) Akira Kurosawa's movies *Yojimbo*, *Rashomon*, and *Seven Samurai* were all fantastic, so all of Kurosawa's movies will be fantastic.
  - (b) Every time a Western director bases a movie off of a Kurosawa film, it gets good reviews. *Star Wars* was loosely based on *The Hidden Fortress*, so it must have gotten good reviews.
  - (c) All fish have gills. Jeremy the Merman has gills, so he is a fish.
  - (d) Angelfish, sharks, and ocean sunfish are all huge fans of samurai films. Since mermen are also fish, they probably like samurai films also.
2. Draw a Venn diagram representing each of the following arguments, and determine if each of them is valid and sound.
  - (a)
    - All humans have two legs.
    - Dick Cheney is a human.
    - Therefore Dick Cheney has two legs.
  - (b)
    - All aliens like to eat broccoli.
    - George H. W. Bush doesn't like to eat broccoli.
    - Therefore George H. W. Bush isn't an alien.
  - (c)
    - If a person is vice president, they must be human.
    - Dick Cheney is human.
    - Therefore Dick Cheney is vice president.
  - (d)
    - If a person is a bar, then it is a frobnitz.
    - Alfred is not a bar.
    - Therefore Alfred is not a frobnitz.
3. Use the unit analysis method demonstrated in class to answer the following questions. If you need any conversions I haven't given you, you can find them on pages 101-102 of your textbook.
  - (a) How many inches are there in a mile?
  - (b) How many centimeters are there in a kilometer?
  - (c) The Principality of Sealand is a micronation 10 kilometers off the coast of England. Use the conversions you determined in parts 3a and 3b to determine how far Sealand is from England in miles. You will also need the following conversion:

$$1 \text{ inch} = 2.54 \text{ centimeters}$$

- (d) Suppose Prince Roy decides to change Sealand's currency. He will start calling it the Turing, after famous English mathematician Alan Turing. You want to buy a pudding on Sealand for 23 Turings. Use the following facts to determine how much it costs in dollars:

$$1 \text{ dollar} = 0.57 \text{ pounds}$$

$$1 \text{ pound} = 10 \text{ Turings}$$

- (e) Prince Roy recently announced that he intends to sell Sealand. He is asking €750 million. If Sealand's total area is  $4000\text{m}^2$ , what is the price per square meter?
- (f) What is the area of Sealand in square feet?