

Math 571: Mathematical Logic

1st homework set, due at 2:25pm on Monday, Sept. 16

Bring your solutions to class, or slide them under the door of Van Vleck 513.

1. (a) Translate the following two English sentences into wffs and make a truth table for each one. (Start by identifying the basic parts of each statement and picking a sentence symbol for each part.)
 - i. The moon is made of green cheese if and only if I am not the princess of Monaco.
 - ii. If the moon is made of green cheese and I am the princess of Monaco, then this is one strange world.
- (b) What truth assignment on your propositional variables (i.e. which row of your truth tables) corresponds to reality, to the best of your knowledge? Which (if any) of the two wffs in (a) does this truth assignment satisfy?
- (c) Does one of the two wffs tautologically imply the other?
2. Do exercise 1.2.4 from Enderton
3. Do exercise 1.2.6 from Enderton
4. (a) Do exercise 1.1.5.a from Enderton
- (b) Do exercise 1.1.5.b from Enderton
- (c) Find upper and lower bounds for the fraction of symbols in a wff that are parentheses.
5. Ask an interesting question about this week's material and try to answer it. This is as serious a question as the rest.