

Assignment V

Dr. Holmes

February 23, 2004

The first lab assignment was assignment IV. I'll give out the second lab assignment (assignment VI) tomorrow.

This assignment is due Monday, March 1.

Prove at least 8 of the 17 assertions on the attached sheet. (recall that to prove $A \equiv B$ is the same as to prove that $A \leftrightarrow B$ is a theorem, and to prove $A \vdash B$ is the same as to prove that $A \rightarrow B$ is a theorem.) It is not a bad idea to prove all of them. Avoid proving just examples that we have done in class!

You may assume (it is important to assume) that if a variable doesn't appear in the argument list after a script letter that the expression represented by that script letter does not contain that variable. For example, $\mathcal{A}(x)$ may be safely assumed not to contain any occurrence of the variable y .

For each of the entailments which are not equivalences, try to explain why the converse entailment is not valid. An example of relations for which it does not hold (it should always be possible to construct a finite counterexample) would be appreciated. I'll give an example of what I mean in class.