

MATH 1090.03

Winter 2000

Date: Feb. 22, 2000

Due: March 2, 2000

Problem Set No. 4



In the following problems you **are expected** to use the Deduction Theorem and the “Chapter 4 style” to your full advantage. Do *not* use the Tautology theorem, but you can use **all** the other rules we have learned (e.g., modus ponens, cut, combine/split hypotheses, Deduction Theorem, resolution, etc.)

You should remember (and use when appropriate) the following fact from class:

To prove $\Gamma \vdash A \equiv B$ you can do so by proving **two** things: $\Gamma \vdash A \Rightarrow B$ and $\Gamma \vdash B \Rightarrow A$.



- Do the following problems from the text, Chapter 3 **in the style suggested above**.

p.61, prove the statements labeled 3.84 (a), (b) and (c).

p.66, problems 3.76, 3.82–3.84.

For the following use a combination of Deduction Theorem and resolution:

- p.122, problems 6.6–6.8.