MATH 1090.03D

Fall 2000

Date: Oct. 16, 2000

Due: Oct. 30, 2000—►**In class—NO papers will be accepted after 11:45am**◄

Problem Set No. 3—On Chapter 3 and 4 of "GS". See also our "Web–Ch.1".

- Do the following problems from the text, Chapter 3.

  3.35, 3.37, 3.55, 3.56, 3.58, 3.61, 3.62, 3.63, 3.64, 3.67.

Hint for the above. Ignore the hints!

- **In this exercise** use the Deduction Theorem and, if helpful, the "cut rule" as your central tools—but do *not* use the "Tautology Theorem".

  Prove (where A, B, C are any given wffs):

  (1) $\vdash A \Rightarrow B \Rightarrow A \wedge B$

  (2) $\vdash (A \Rightarrow B) \Rightarrow (A \Rightarrow C) \Rightarrow (A \Rightarrow B \wedge C)$.

- In this exercise you are allowed to use Post's Tautology Theorem (and any other "valid" tools we have "built" in class).

Prove for any A, B, C (wffs) that

  (1) $\vdash (A \wedge B \Rightarrow C) \equiv (A \Rightarrow B \Rightarrow C)$

  (2) Also do, Ch. 4, p.80, 4.2, 4.5, 4.12.