CSci 1302 Assignment 2
Due Wedn., February 4th, 2004

Note: the symbol $<\equiv>$ stands for logical equivalence.

Problem 1 (4 points). Exercise 3.6 pp. 32-33 Parts 3,5. Please construct the truth tables for the formulas.

Problem 2 (4 points). Exercise 3.7 pp. 35 Parts 8, 9. Please show all your computations.

Problem 3 (8 points (part 1 is 2 points, the other two parts are 3 points each)). Exercise 3.8 pp. 42-43.

Problem 4 (5 points). Exercise 3.9 p. 43, Part 2 (you don't need to suggest an application for this digital circuit).

Problem 5 (12 points). Use truth tables to prove or disprove the following:

A. $p \Rightarrow (q \vee r) <\equiv> (p \Rightarrow q) \vee (p \Rightarrow r)$

B. $p \Rightarrow (q \wedge r) <\equiv> (p \Rightarrow q) \wedge (p \Rightarrow r)$

C. $(p \vee q) \Rightarrow r <\equiv> (p \Rightarrow r) \vee (q \Rightarrow r)$

D. $(p \wedge q) \Rightarrow r <\equiv> (p \Rightarrow r) \wedge (q \Rightarrow r)$