CSci 1302 Assignment 4

Due Wedn., Feb. 11th in class

Problem 1 (8 points). Prove the following using deductive proofs (not truth tables).

1. $p \wedge \sim r$ (use a proof by contradiction)
   $q \rightarrow r$

   $\therefore \sim(p \rightarrow q)$
2. $(p \vee q) \rightarrow (p \wedge q)$

   $\therefore p \rightarrow q$

Problem 2 (2 points). Exercises 10, 12 p. 55.

Problem 3 (4 points). Exercises 15, 17 p. 55.

Problem 4 (8 points). Exercises 21, 25 p. 55. Simplify the resulting boolean formulas (if possible) to construct smaller circuits. Show the resulting circuits.

Problem 5 (6 points). Exercises 27, 29 p. 56.