Tutorial ...

Name:_____

ID:_____

Mathematics 1E2 2006–07

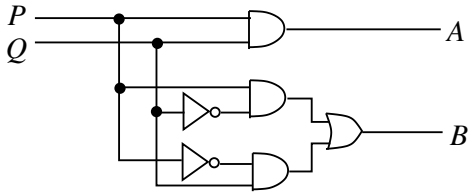
HW 16 Due 5/3/07

(1)(16 marks) Prove by resolution that the CNF

$$ABC, A\overline{B}C, A\overline{BC}, B\overline{C}, \overline{A}BC, \overline{AB}$$

is inconsistent.

(2) (16 marks) Construct a truth-table (with columns for inputs P, Q and outputs A, B). Hence say what it does.



(3)(18 marks) Using the 3-bit addition circuit as a starting-point, design a circuit which converts input $P_2P_1P_0$ to its 2s complement, by negating all bits and adding 1.