
CS 371
Assignment #4
Digital Logic FUNdamentals :)
Simple Logic Gates

Due 10/19/09, in class

Lab

The goal of this assignment is to get your feet wet with a breadboard.

Chips required

7400 quad 2 input NAND gate
7404 hex INVERTER
7408 quad 2 input AND gate
7410 triple 3 input NAND gate
7432 quad 2 input OR gate
7486 quad 2 input XOR gate

Lab work - to be done on the breadboards in pairs (include both names in your report).

- 0) Use a 7408 and check the truth table of a 2 input AND gate.
- 1) Use a 7432 and check the truth table of a 2 input OR gate.
- 2) Use a 7404 and check the truth table of an invert gate.
- 3) Use a 7400 and check the truth table of a 2 input NAND gate.
- 4) Use a 7486 and check the truth table of a 2 input XOR gate.
- 5) Use a 7410 and check the truth table of a 3 input NAND gate.
- 6) An N input NAND gate with all N inputs tied together behaves like an INVERT gate. Demonstrate this in lab for N=2 and 4.
- 7) An XOR gate with one input tied to logic 1 behaves like an INVERT gate. Demonstrate this in lab.

Book Problems

To be done individually (again don't forget your name atop the first sheet).

Do problems 2acd, 4, 10ac(sum of minterms only), 12ac(sum-of-products only), and 32 from Pages 91-96 of Mano and Kime 4th edition.