Tuesday Reading Assessment: Chapters 4-5

Prof. Jordan C. Hanson

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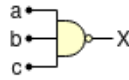

Figure 1: A 3-input NAND gate is LOW only when all three inputs are HIGH.

1 Gray Code Conversion (Review)

1. Convert the following bit sequences from binary to gray code: (a) 00 (b) 01 (c) 10 (d) 11

2. Convert the following bit sequencies from gray to binary code: (a) 00 (b) 01 (c) 11 (d) 10

2 Logic Circuits, Boolean Algebra, and Karnaugh Maps

1. Consider the three input NAND gate in Fig. 1. (a) Based on Fig. 1, create the truth table for the 3 input NAND. How many terms would there be in the S-SOP expression for this circuit? (b) From the data in the truth table, create the 3-variable Karnaugh map. (c) Generate the simplified Boolean expression from the Karnaugh map. *Hint: remember that cells in the top row are adjacent to those in the bottom row.*

2. Draw a gate or circuit that represents the output of the simplified circuit from the previous exercise.