Please email this to me by no late than Saturday at midnight (atkinsm@onid.orst.edu)

1   NOT Gates

Investigate switching potentials, what does the gate count as a logical 1? A logical 0?

Investigate what happens when you link several NOT gates together in a chain? In a loop? How does this change if you have an even or odd number of gates?

2   NAND Gates

Test the truth table by applying a square wave at one input and holding the other input at a logical 0, and then a logical 1. Then apply a ramp wave to both inputs and see what happens.

For the following set up, what is the maximum I_{out} for which V_{out} is still a high?
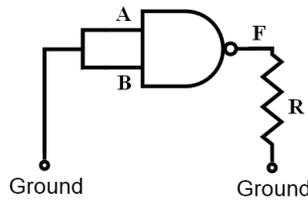

Figure 1: *NAND gate with both inputs and output grounded*

For the following set up, what is maximum I_s such that V_{out} is still low?
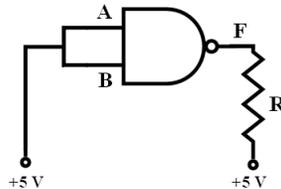

Figure 2: *NAND gate with +5 V applied at each end of the circuit*

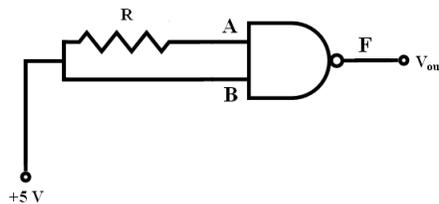For the following set up, what is the minimum I_{in} such that V_A stays high?

Figure 3: *NAND gate with R before A*

What happens when you leave an input to a NAND gate floating (not connected to anything) while the other is held high/low? Using the truth table, what would you say the gate interprets a floating input as?

Create an XOR gate out of NAND gates.