## ECE 320 - Homework #8

DTL, TTL Logic, MOSFETs. Due Monday, March 9th

## **DTL Logic**

1) Determine the voltages and currents for the following DTL AND gate. Assume 3904 transistor (Vce = 0.2V, Vbe = 0.7V,  $\beta$ =100)



2) Determine the voltages and currents for the following DTL OR gate. Assume 3904 transistors



3) (Lab): Build a DTL NOR gate in lab. Measure

- The votlages when the input is { 0V, 0V },
- The votlages when the input is { 0V, 5V }, and
- The maximum frequency the logic gate can respond to (apply a square wave at the input)

## **TTL Logic**

4) Determine the voltages for the following TTL inverter. Assume 3904 transistors.

