

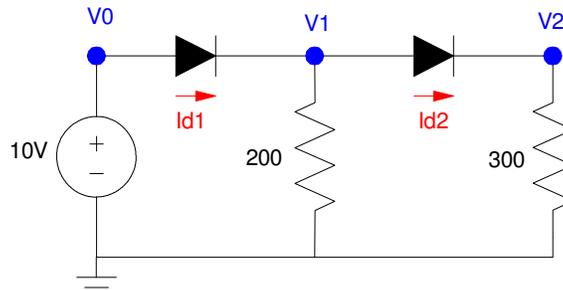
ECE 111 - Homework #13

Week #13 - ECE 320 Electronics I. Due Tuesday, April 18th
Please email to jacob.glower@ndsu.edu, or submit as a hard copy, or submit on BlackBoard

Assume the VI characteristics for 1N4004 diodes are:

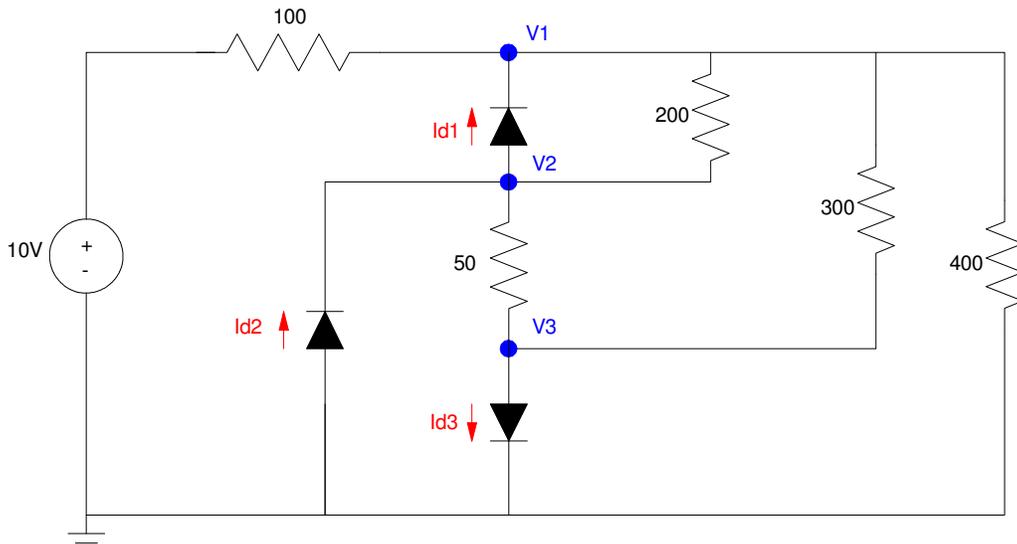
$$V_d = 0.038 \cdot \ln\left(\frac{I_d}{7.7 \cdot 10^{-11}} + 1\right) \quad I_d = 7.7 \cdot 10^{-11} \left(\exp\left(\frac{V_d}{0.038}\right) - 1\right)$$

- 1) Write the voltage node equations for the following circuit.
- 2) Solve using fminsearch and MATLAB
- 3) Check your results using CircuitLab and 1N4004 diodes



Problem 1-3

- 4) Write the voltage node equations for the following circuit.
- 5) Solve using fminsearch and MATLAB
- 6) Check your results using CircuitLab and 1N4004 diodes



Problem 4-6

