

# ECE 111 - Homework #13

Week #13 - ECE 320 Electronics I. Due November 30th

Please submit as a Word or pdf file to BlackBoard or email to Jacob\_Glower@yahoo.com with header ECE 111 HW#13  
www.BisonAcademy.com

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
  - Use 1N4004 diodes

