

Name: Key

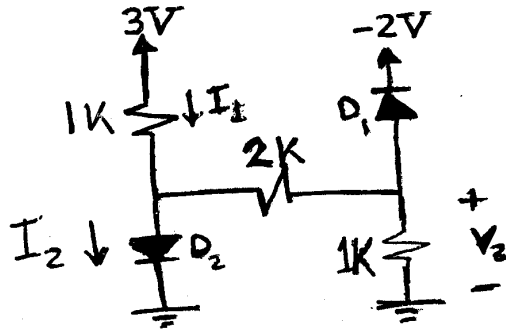
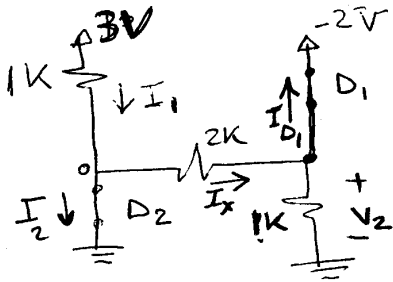
Quiz # 1

ID#

For the circuits shown below find the values of the labeled currents and voltages indicated, using the **Ideal diode** model?

Assume

D_1 on D_2 on



By Ohm's Law:

$$I_1 = \frac{3-0}{1K} = \underline{\underline{3mA}}$$

$$I_x = \frac{0 - (-2)}{2K} = 1mA$$

By KCL:

$$I_2 = I_1 - I_x = 3 - 1 = \underline{\underline{2mA}}$$

$$V_2 = \underline{\underline{-2V}}$$

Check assumption: $V_{D2} = 0$ & $I_2 = 2mA > 0$

$V_{D1} = 0$ & $I_{D1} = I_x - \frac{V_2}{1K} = 1 + 2 = 3mA > 0$

OUR Assumption is Right