

Name:

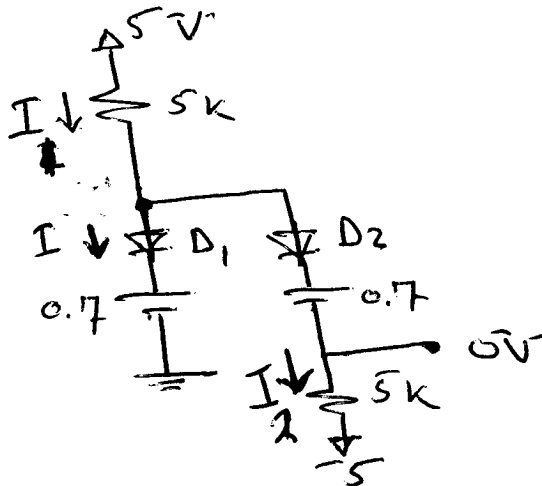
Key

Quiz # 1

ID#

For the circuit shown below find the values of the labeled current and voltage indicated, using the constant voltage drop model ( $V_{D0}=0.7V$ ).

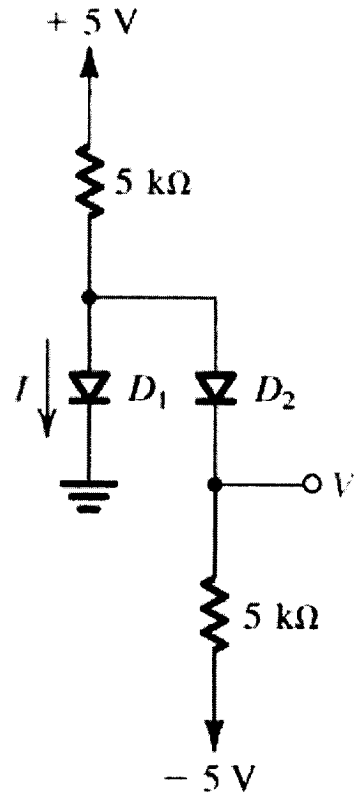
⊗ assume  $D_1$  &  $D_2$  on



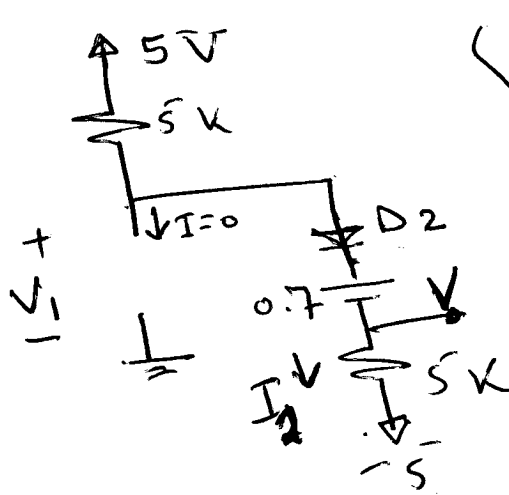
$$I_2 = \frac{0 - (-5)}{5k} = 1mA$$

$$I_1 = \frac{5 - 0.7}{5k} = 0.86mA$$

$$I = I_2 - I_1 = -0.14mA \Rightarrow \text{assumption is wrong} \quad \times$$



⊗ assume  $D_1$  off  $D_2$  on



$$I_1 = \frac{5 - 0.7 - (-5)}{10k} = 0.93mA$$

$$V_1 = 0.7 + I_2 \times 5k - 5 = 0.35V > 0.7$$

assumption is Right

$$V = I_2 \times 5k - 5 = -0.35$$

$$I = 0$$

