Quiz for Lesson 6,7

Name: _____   Student ID: _____

Prob. 1

We want to determine i_D, v_D, v_O in the circuit shown below. Assuming v_I and R are known as well as I_S, the saturation current for the diode, and V_T, the thermal voltage, list three independent equations that involve i_D, v_D, v_O.
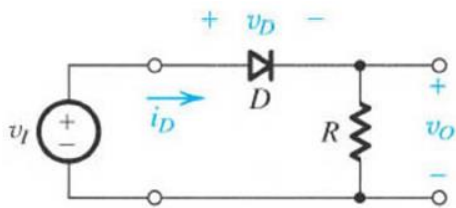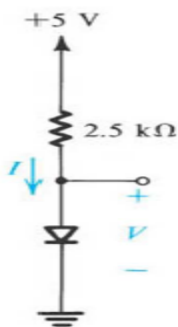

Prob. 2

Plot v_O vs v_I for the circuit shown above using the ideal diode model.

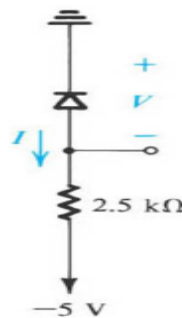## Prob. 3

Determine I and V in the following PN junction diode circuits using the constant voltage drop model with $V_{D,on} = 0.7V$.

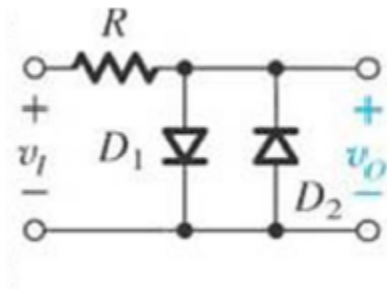(a)   (b)

For the following problems, use the constant voltage drop model with $V_{D,on} = 0.7V$.

Prob. 4

Plot v_O vs v_I for the following PN junction circuit.

Prob. 5

Determine the expression for I_R (the current flowing through R into the didoes) as a function of v_I in the circuit shown above.

Prob. 6

Assume $v_I(t) = V_0 \sin(2\pi ft)$ with $V_0 = 1V$, $f = 1KHz$.

Plot $v_I(t)$ from $t = 0$ to $t = 1msec$.