EE 310
Practice Problem 2

A diode *D* with n = 1 and $I_s = 1 \times 10^{-15}\ A$ at room temperature (T = 300 K) is connected in series with a dc voltage source V_{DD} and a resistance R = 1 kΩ in such a way to make *D* forward biased. Using the iterative method, estimate V_D down to the mV as well as I_D if :

1) V_{DD} = 1.5 V (Ans.: V_D = 0.712 V, I_D = 0.788 mA)
2) V_{DD} = 3 V (Ans.: V_D = 0.740 V, I_D = 2.26 mA)
3) V_{DD} = 0.75 V (Ans.: V_D = 0.657 V, I_D = 0.093 mA)