Lab 1 Diodes Introduction

1. Assemble the circuit in Fig. 1:

2. Calculate: $V_D =$ _____   MultiSim: $V_D =$ _____

   Calculate: $I_D =$ _____   MultiSim: $I_D =$ _____

   Measure: $V_D =$ _____

   Measure: $I_D =$ _____

Fig. 1

3. How do the calculated, MultiSim and measured values compare?
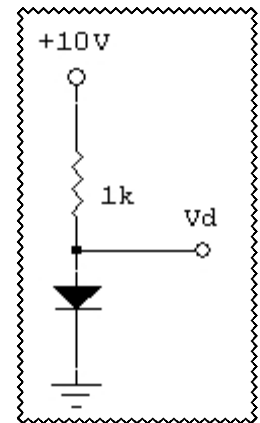   What is the relationship between V_D and I_D?

4. Assemble the circuit Fig. 2, (notice that the diode is reversed:)

5. Calculate: $V_D =$ _____   MultiSim: $V_D =$ _____

   Calculate: $I_D =$ _____   MultiSim: $I_D =$ _____

   Measure: $V_D =$ _____

   Measure: $I_D =$ _____

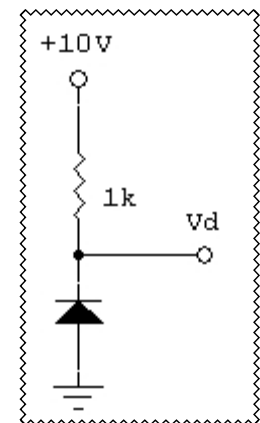Fig.2

6. What has happened to the relationship between V_D and I_D?

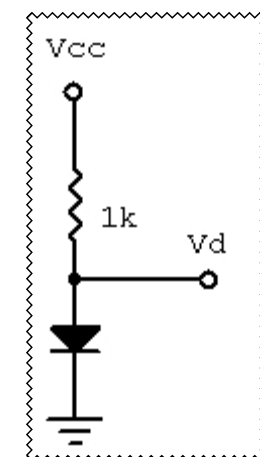7. Once again assemble the circuit in Fig 1 (notice that the value of V_{CC} will be changed:)

Fig. 1

8. Apply the values of V_{CC} shown in Table 1 and also measure the values of V_D and I_D as indicated in the table:

V_{CC}	V_D	I_D
1V		
3V		
5V		
10V		

Table 1

9. Plot the data from Table 1 in the graph shown in Fig. 3:

10. From the graph in Fig. 3, what happens to V_D as V_{CC} is increased? What happens to the current, I_D? What must be happening to the resistance of the diode?
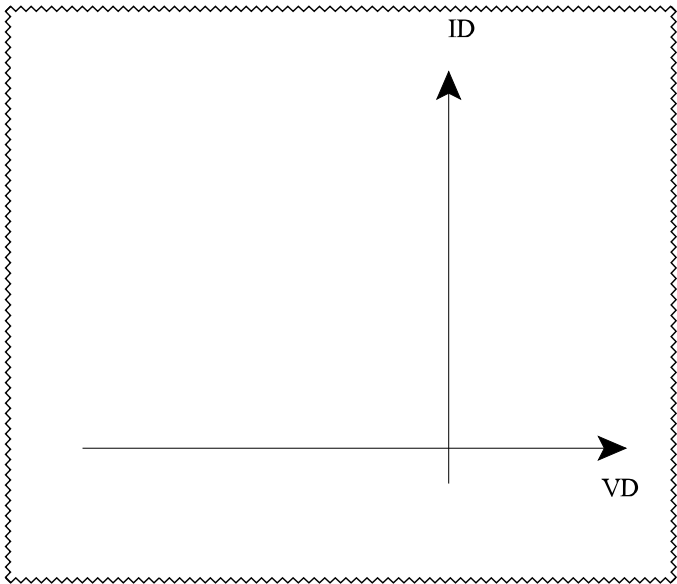
ID

VD

Fig. 3