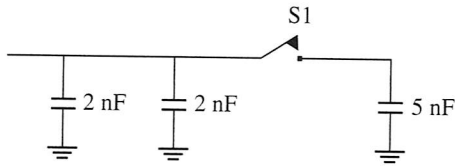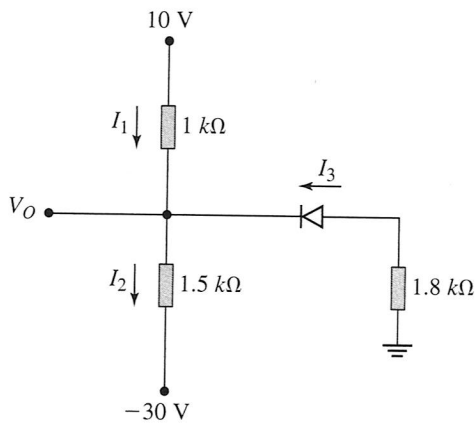**1-27.** The 2 nF capacitors are precharged to 3 V, and the 5 nF capacitor is precharged to 1.2 V. At $t = 0$, switch S1 closes. What is the final voltage?
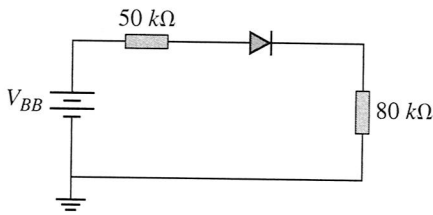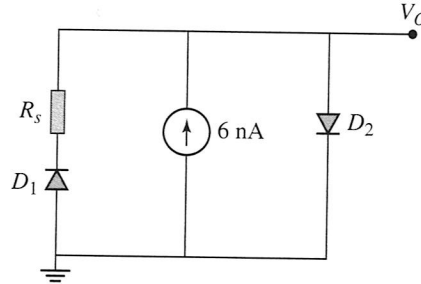

Diodes

1-28. Calculate V_O and the current through each resistor. Assume that the forward bias diode voltage is 0.7 V.
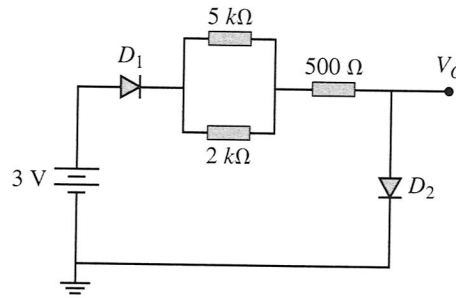

1-29. Given that $I_S = 10$ nA. Calculate I_D and V_D for (a) $V_{BB} = 1$ V and (b) $V_{BB} = 10$ V.
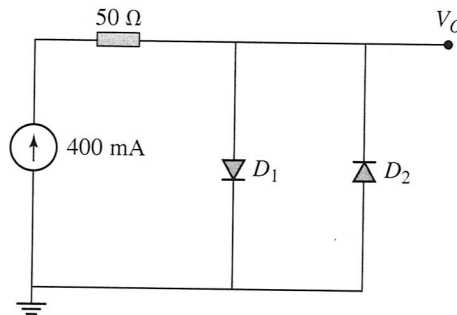

1-30. Calculate V_O given that the reverse bias saturation current $I_S = 1$ nA and you are at room temperature.

1-31. Diode D_1 has a reverse bias saturation current of $I_{s1} = 1$ nA, and diode D_2 has $I_{s2} = 4$ nA. At room temperature, what is V_O?

1-32. Calculate the voltage across the diodes given that the reverse bias saturation current in D_1 is $I_{s1} = 175$ nA, and $I_{s2} = 100$ nA.
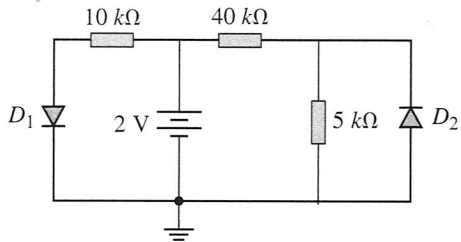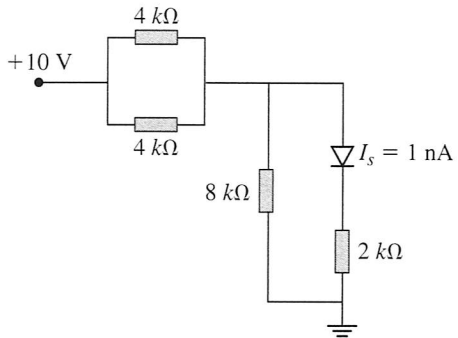

1-33. Giv
I_{D1}

1-34. Cal

+10 V

1-33. Given that $I_{sD1} = I_{sD1} = 100$ pA. Calculate I_{D1} and V_{D1}. Calculate I_{5k}.

1-34. Calculate the diode current and voltage.

1-35. $I_s = 2\mu A$ for the diode. Calculate V_D and I_D.