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?

![Circuit Diagram](image)

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

![Circuit Diagram](image)

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.

![Circuit Diagram](image)

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

![Circuit Diagram](image)

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

![Circuit Diagram](image)

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

![Circuit Diagram](image)

1-33. Given $I_{DD} = 0.01$ mA and $I_{DD} = 0.005$ mA. Calculate $I_{DD}$.

![Circuit Diagram](image)

1-34. Calculate the voltage across the diodes given that the reverse bias saturation current in $D_1$ is $I_{bb} = 175$ nA, and $I_{bb} = 100$ nA.
1-33. Given that $I_{D1} = I_{D2} = 100$ pA. Calculate $I_{D1}$ and $V_{D1}$. Calculate $I_{S1}$.

1-34. Calculate the diode current and voltage.

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