Homework #7
Due March 25

Problem 1) Determine the current $i_C(t)$ through the capacitor given the voltage across it shown in the graph.

Problem 2) Find the voltage $v_C(t)$ across the capacitor given the current through it described by the equation and the graph.

Problem 3) Calculate the voltage across the inductor $v_L(t)$ given the current described by the graph.

Problem 4) Determine the equivalent capacitance $C_{eq}$ of the network shown.
Problem 5) Find the equivalent capacitance $C_{eq}$ of the network shown in the figure.

Problem 6) Find the equivalent inductance $L_{eq}$ for the network shown if all of the inductors have value $L = 6\, \text{mH}$.

Problem 7) Determine the energy stored in the capacitor and the inductor in the DC circuit shown.

Problem 8) Find the capacitor voltage $v_C(t)$ for time $t > 0$. Assume the switch has been in the open position for a long time before $t = 0$. 
Problem 9) Calculate and plot the capacitor voltage $v_C(t)$ for time $t > 0$. Assume the switch has been in the lower position for a long time before $t = 0$.

Problem 10) Find and plot the inductor current $i_L(t)$ for time $t > 0$. Assume the switch has been in the open position for a long time before $t = 0$. 