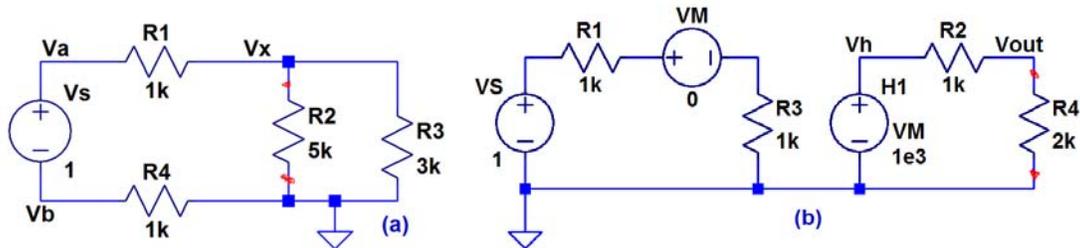
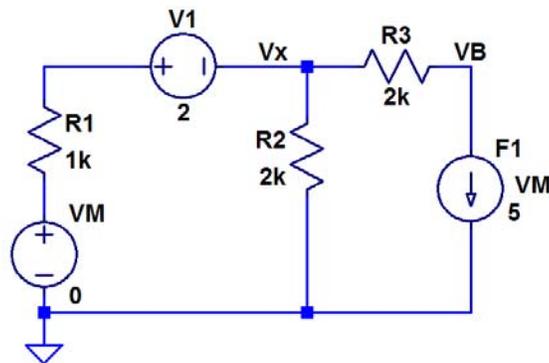


Show your work for credit!

- Calculate the voltage across V_x and V_{out} in the following circuits. Next find the Thevenin and Norton equivalent circuits at the port indicated by the red dots in the below schematics (this means without R_2 or R_4 in the circuit). Show that your equivalent circuits are correct and then verify with LTspice. (6 points)



- Calculate V_B in the following circuit and then verify your calculation using LTspice. (3 points)



- Write an equation for V_{out} as a function of V_{in} in the following circuits. Plot V_{out} if V_{in} varies from -1 to 1 V in each circuit. Verify your answers, including your plots, using a DC sweep in LTspice. (6 points)

