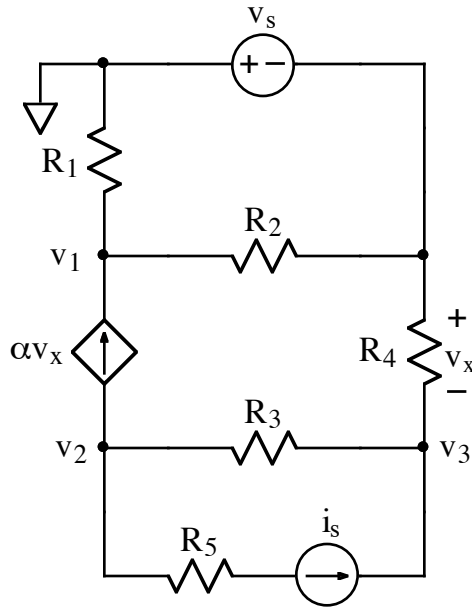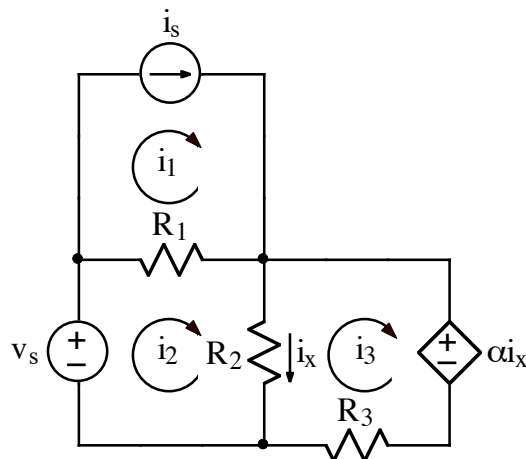ECE 1270
Su 08
HOMEWORK #8
THE
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OF UTAH

1.

For the circuit shown, write three independent equations for the node-voltages, $v_1, v_2,$ and v_3. The quantity v_x must not appear in the equations.

2. Make at least one consistency check (other than a units check) on your expression for problem 1. In other words, choose component values that make the values of $v_1, v_2,$ and v_3 obvious, and verify that your answer to problem 1 gives these values. Specify your consistency check by listing a numerical value for every source and resistor.
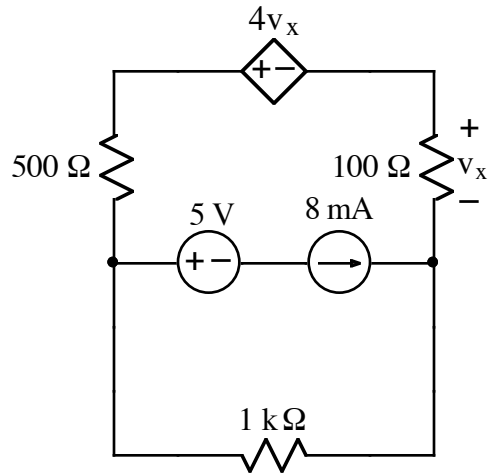
3.

For the circuit shown, write three independent equations for the three mesh currents, $i_1, i_2,$ and i_3. The quantity i_x must not appear in the equations.

4.
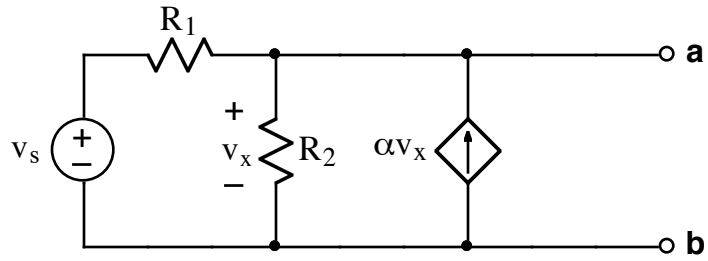
Find the Thevenin equivalent circuit at terminals a-b. v_x must not appear in your solution. **Hint:** use the node-voltage method.

5.

Calculate the power dissipated by the dependent voltage source, (labeled $4v_x$).