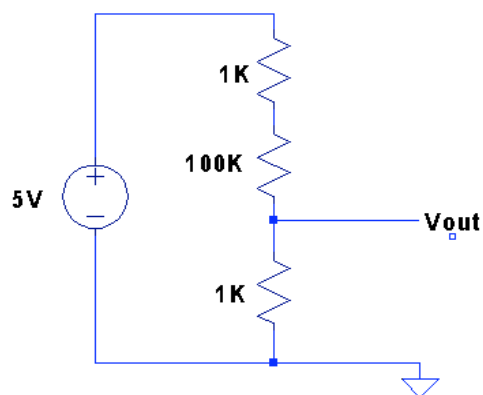
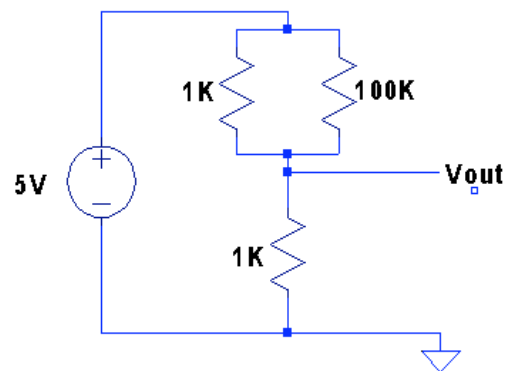
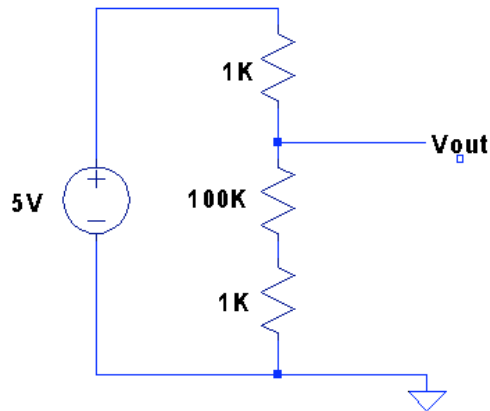
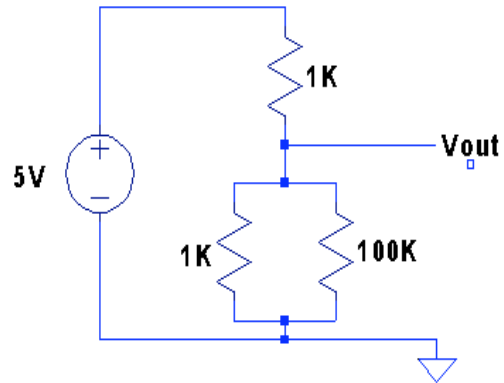
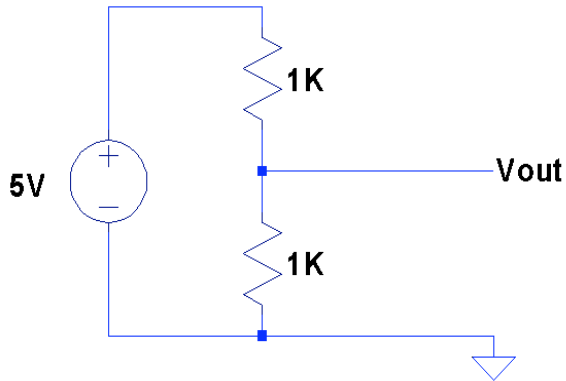


Physics 364 – fall 2010 – homework #1 (3 problems)
 due in lab, 2010-09-16 (Thursday)

Problem 1:

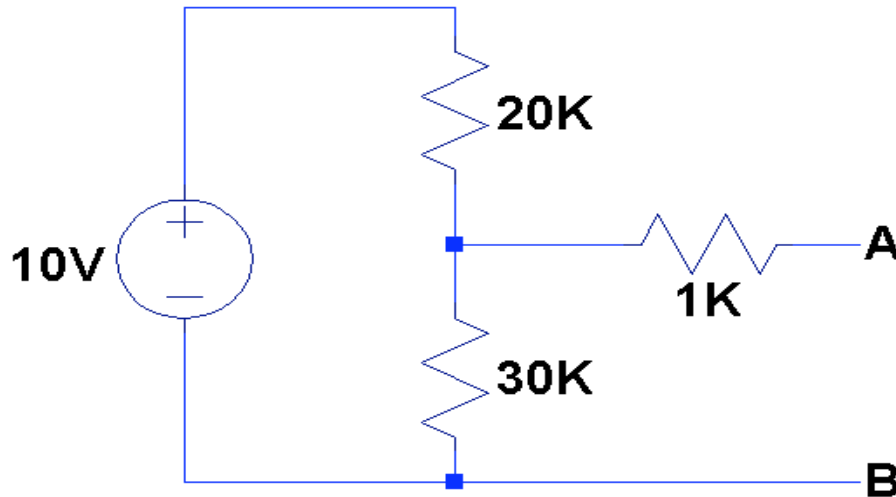
(a) Calculate V_{out} for each of the following circuits. (All resistor values are either 1K or 100K ohms.)



(b) Now connect a 10K ohm load to each circuit between V_{out} and ground. Calculate each V_{out} with the load attached.

Problem 2:

- (a) Draw the Thevenin and Norton equivalent circuits for the circuit drawn below.
- (b) What exactly is “equivalent” about the original, the Thevenin equivalent, and the Norton equivalent circuits? In what sense are they equivalent to each other?
- (c) Attach a $10\text{K}\Omega$ load to each circuit (original, Thevenin, and Norton), between points A and B. In each case, what is the voltage across the load resistor (i.e. the voltage difference between point A and point B). What is the current through the load resistor?
- (d) In each case, what is the power dissipated in the load? What is the power dissipated in the complete circuit?



Problem 3:

Solve Bugg problem 2.6 (on page 35), but with the component values in the book replaced with the values shown in the drawing below.

