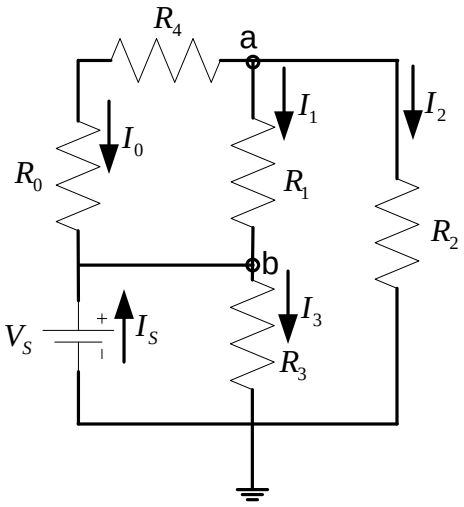
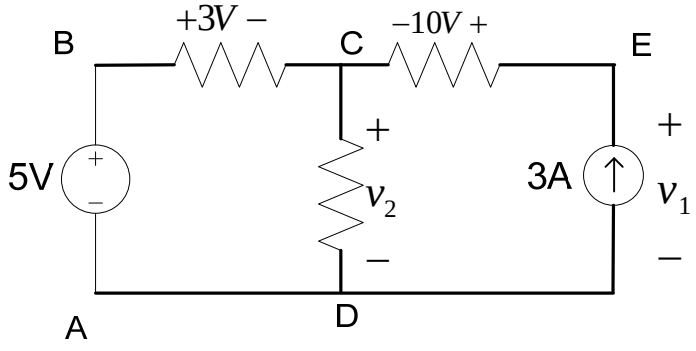
CG1108 AY2010/11 Sem2
Tutorial 1

1. The capacity of a car battery is usually specified in ampere-hours. A battery rated at say, 100 A-h should be able to supply 100A for 1 h, or 50A for 2h, 25A for 4 h or any other combination yielding product of 100A-h. How many coulombs of charge should we be able to draw from a fully charged 100A-h battery?

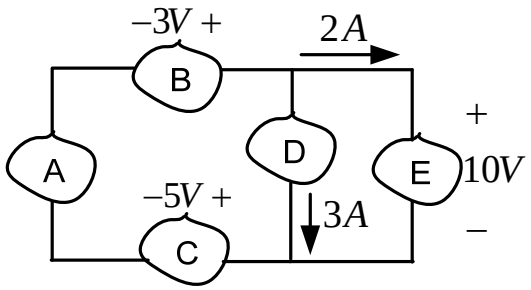
2. Use Kirchoff's current law to determine the unknown currents in the circuit of the figure. Assume that I_0=-2A, I_1=-4A, I_s=8A and V_s=12V.



3. Apply KVL to find the voltages v1 and v2 in the figure.



4. For the circuit given here,
   a. Determine which components are absorbing power and which are delivering power.
   b. Is conservation of power satisfied? Explain your answer.



5. An incandescent light bulb rated at 100W will dissipate 100W as heat and light when connected across a 110-V ideal voltage source. If six of these are connected in series across the same source, determine the power each bulb will dissipate.

6. In the circuit given here, the power absorbed by the 15-Ohm resistor is 15W. Find R.