Important Remarks

- Homework is due on Sept. 6th, 2013 at the beginning of class

- Start early and get help if you need it

- Start a new page per problem

- Show all the work

- Specify all the units

- Circle your answers

- Staple pages

Homework Problems:

1. Given the circuit shown in Figure 1,

   (a) label all the necessary variable along with polarity or direction on the schematics,

   (b) use KCL to compute V_s, and

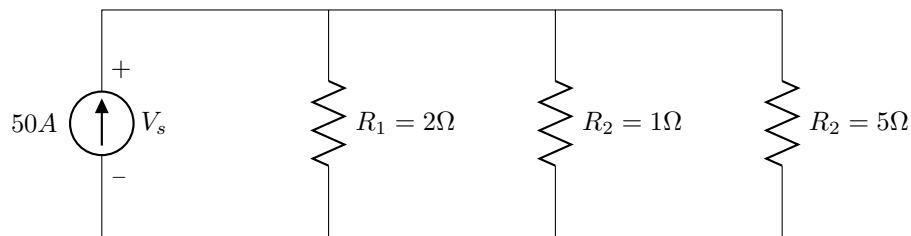   (c) compute the current through each resistor.

Figure 1: Schematic for Problem 1

2. For the following figures, reduce the circuit using what you know about resistors in series and parallel. Redraw each in fully reduced form (a single resistor, or a single resistor and voltage source for (d) and (e)), and label the equivalent resistance of your result. Hint: Leave your calculator out of this one and solve these algebraically.
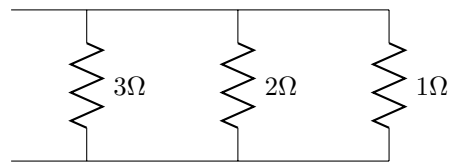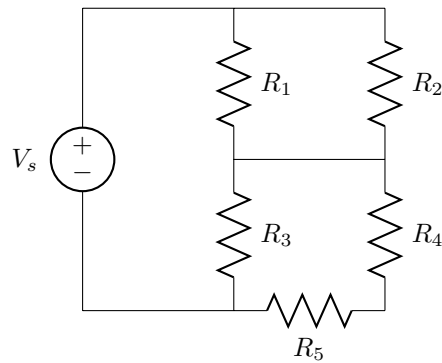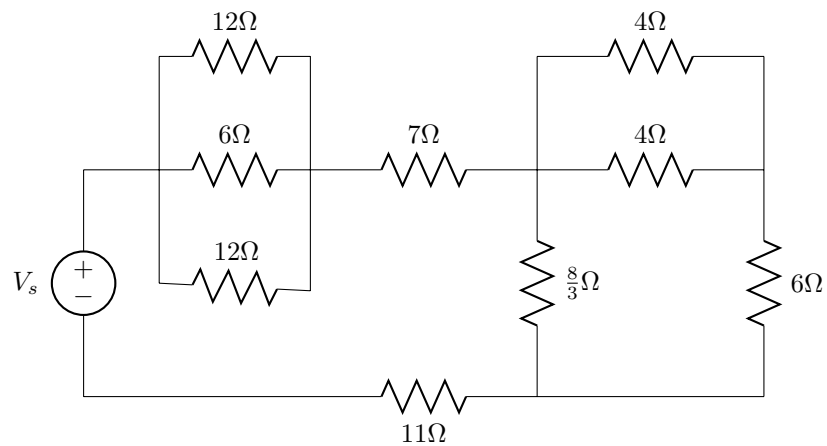
   (a)

   (b)
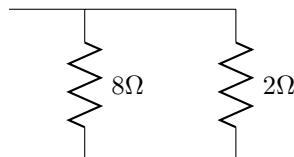
(c)

(d)

(e)

3. Perform the following unit conversions. Do it in steps and show your work. Express your answer both in decimal numbers (like this: 0.00001) and in scientific notation (like this: 1.0×10^{-6}).

   (a) 0.05mV to Volts

   (b) 713kΩ to Ω

   (c) 40nF to µF (F is the abbreviation for Farads, our unit for measuring capacitance).

   (d) 125mA to kA