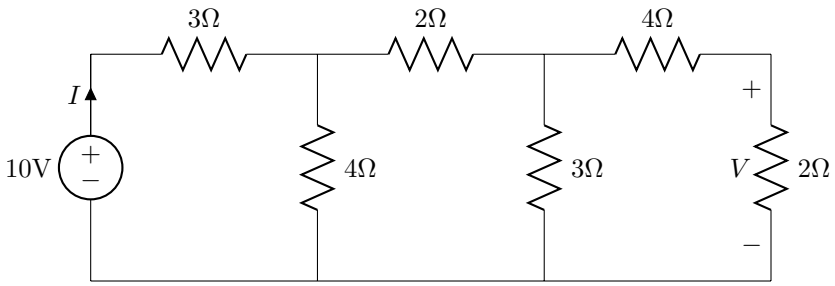
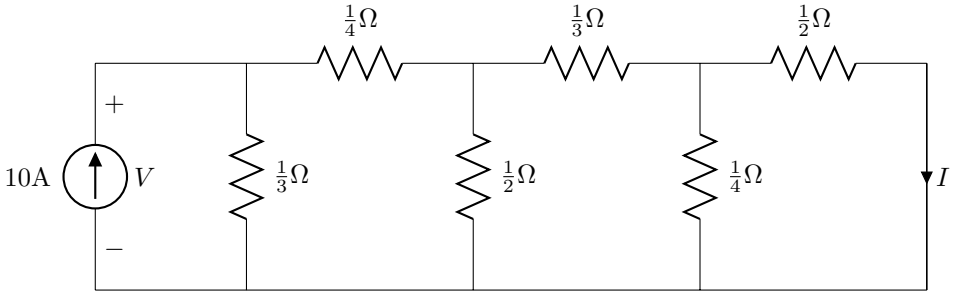
Important Remarks

- Homework is due on Sept. 13th, 2011 at the beginning of class
- **For all problems, keeping your work in fractions will produce easier, more accurate results.**
- 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

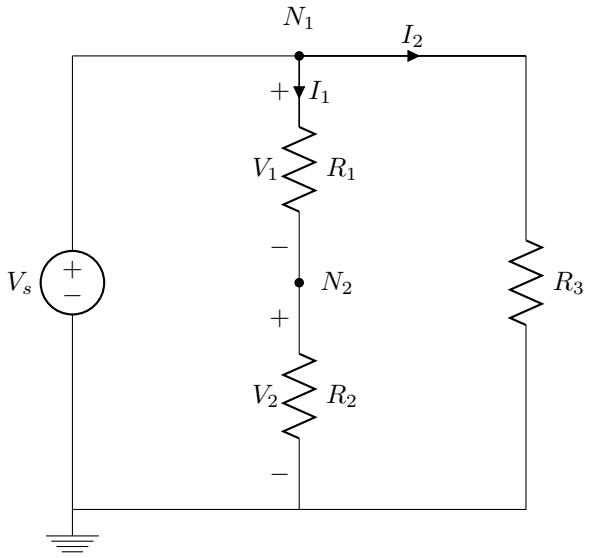
1. Given figure below, find I and V using circuit reduction and other techniques.



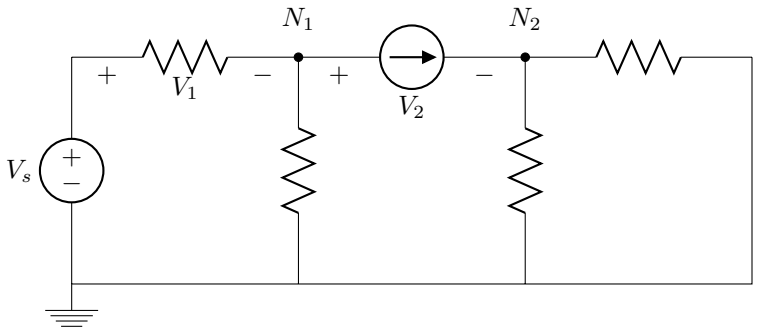
2. Given the figure below, find I and V using circuit reduction and other techniques.



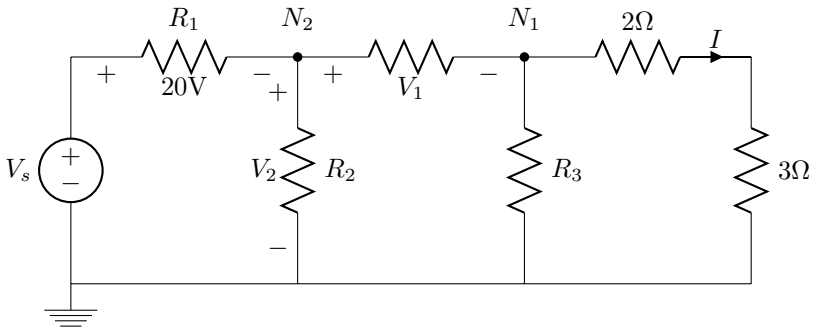
3. Given the figure below, $V_s = 5\text{V}$, $R_1 = 375\Omega$, $R_3 = 25\Omega$. With a multimeter we measure 1.25V at N_2 with respect to ground. Find the voltage at N_1 (w.r.t. Gnd), R_2, V_1, I_1, and I_2 using nodal analysis and other techniques.



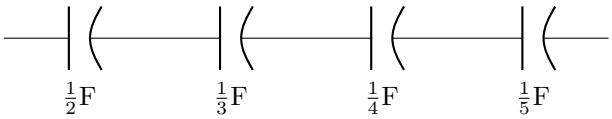
4. Given the figure below, $V_s = 10\text{V}$. With a multimeter we measure (w.r.t. Gnd) 4V at N_1 and 7V at N_2. Find V_1 and V_2.



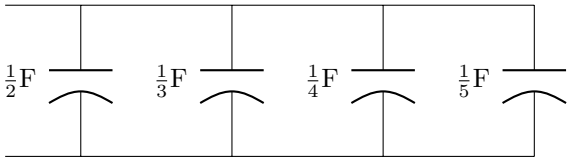
5. In the figure below, $I = 8$A. With a multimeter we measure (w.r.t. Gnd) 60V at N_2. Using nodal analysis and other techniques, find V_s, V_1, V_2, and the measurement we would expect to get at N_1 (w.r.t. Gnd).



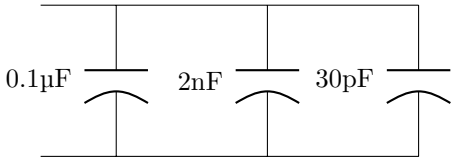
6. The figure below shows a number of capacitors connected in series. Redraw this circuit as a single capacitor equivalent to this combination, and calculate its value C_{eq}.



7. The figure shows a number of capacitors connected in parallel. Redraw this circuit as a single capacitor equivalent to this combination, and calculate its value C_{eq}.



8. The figure below shows a number of capacitors connected in parallel. Redraw this circuit as a single capacitor equivalent to this combination, and calculate its value C_{eq}. **Don't round off your answer**.



9. The figure below shows a number of capacitors connected in series. Redraw this circuit as a single capacitor equivalent to this combination, and calculate its value C_{eq}.