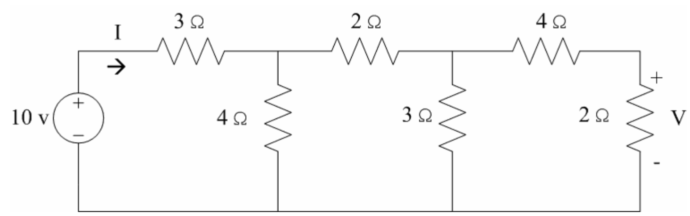
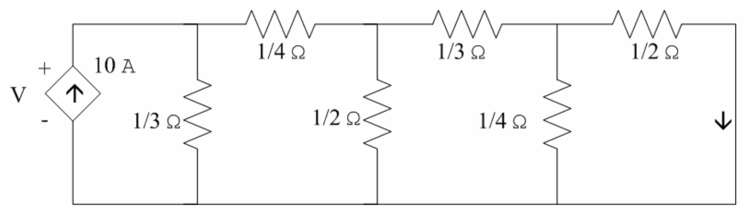
All the normal rules apply: *Due next class, work on separate paper, start early, show your work, label everything, specify units, circle answers.*

For all these problems, keeping your work in fractions will produce easier, more accurate results!

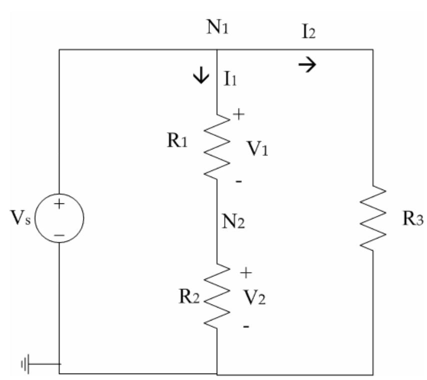
1. For the figure below, find I and V using circuit reduction and other techniques.



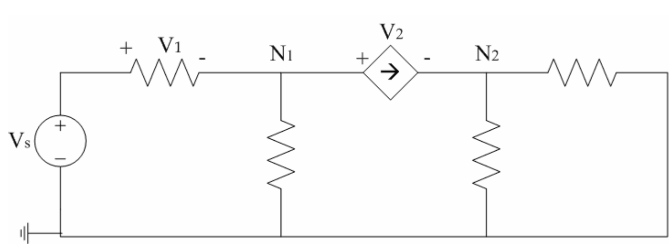
2. For the figure below, find V and I using circuit reduction and other techniques.



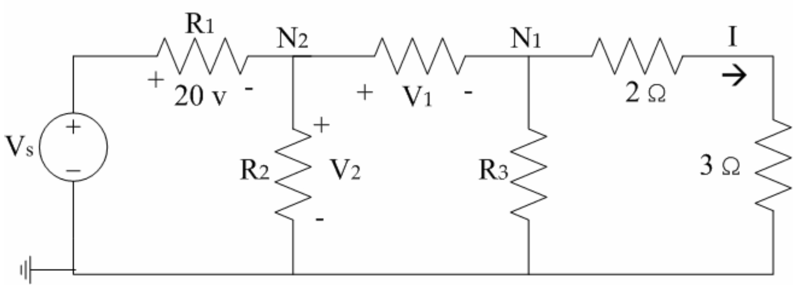
3. In the figure below, Vs = 5 v, R_1 = 375 Ω, R_3 = 25Ω. With a multimeter we measure 1.25 v at N_2 with respect to ground. Find the voltage at N_1 (w.r.t. Gnd), R_2, V_1, I_1, and I_2 using nodal analysis and other techniques.



4. In the figure below, Vs = 10 v. With a multimeter we measure (w.r.t. Gnd) 4 v at N_1 and 7 v at N_2. Find V_1 and V_2.

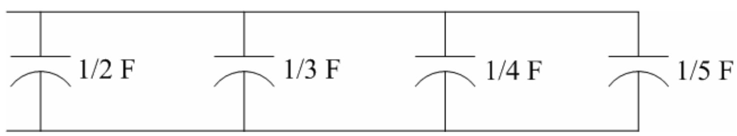


5. In the figure below, I = 8 A. With a multimeter we measure (w.r.t. Gnd) 60 v at N_2. Using nodal analysis and other techniques, find Vs, V_1, V_2, and the measurement we would expect to get at N_1 (w.r.t. Gnd).

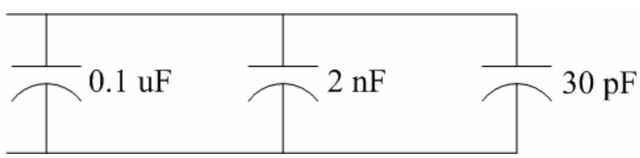


6. The figure below shows a number of capacitors connected in series. Redraw this circuit as a single capacitor equivalent to this combination, and calculate its value C_{eq}.

7. The figure 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}.



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}. *Do not 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}.