

EE40

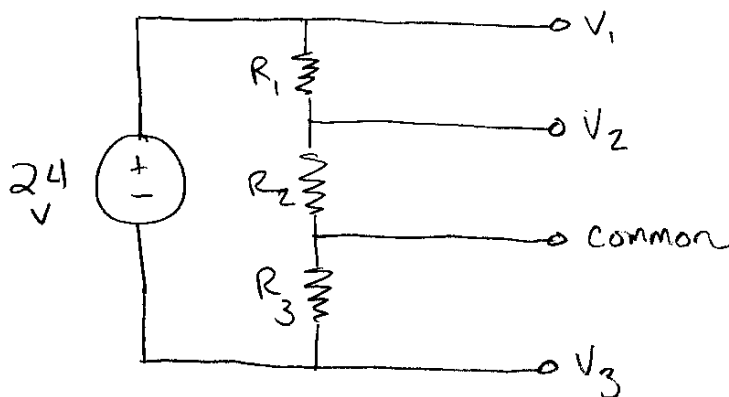
Homework #4*

Due October 10, 2002

Problem 1:

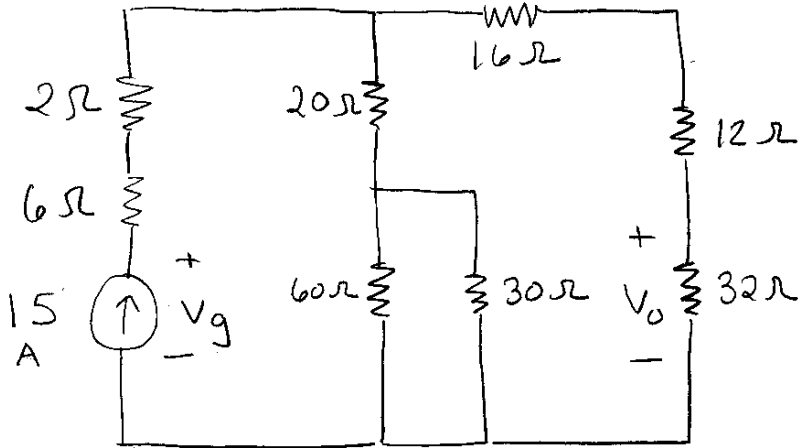
There is often a need to produce more than one voltage using a voltage divider. For example, the memory components of many personal computers require voltages of -12 V , 5 V , and 12 V all with respect to a common reference terminal. Select the values of R_1 , R_2 & R_3 in the circuit below to meet the following design specs:

- 1) The total power supplied to the unloaded (as-is) circuit by the 24 V source is 60 W
- 2) With respect to the common node, $V_1 = 12\text{ V}$, $V_2 = 5\text{ V}$, and $V_3 = -12\text{ V}$.

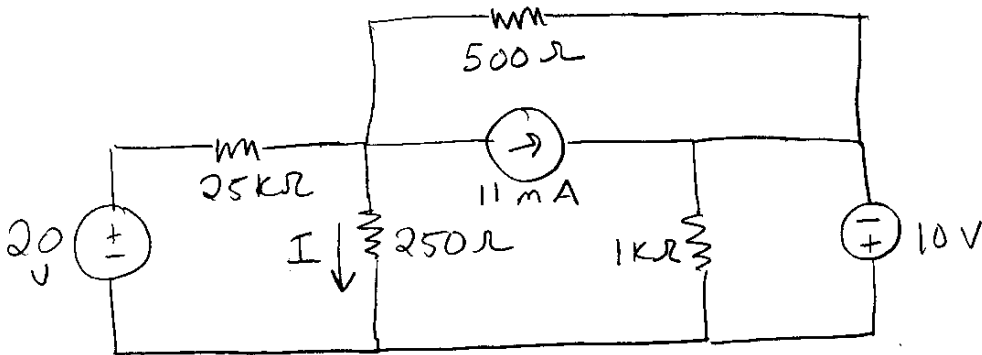


* All problems from Electric Circuits by Nilsson and Riedel

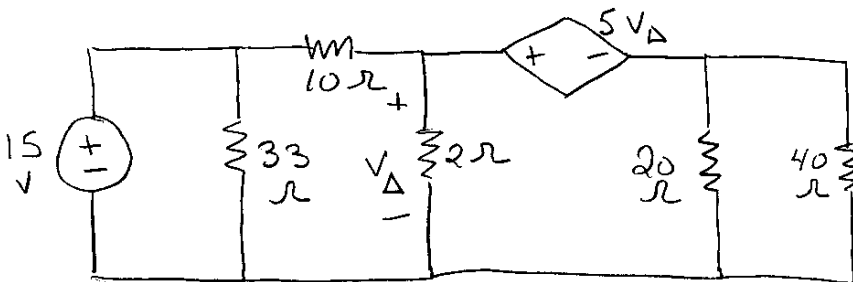
Problem 2°: Find V_0 and V_g :



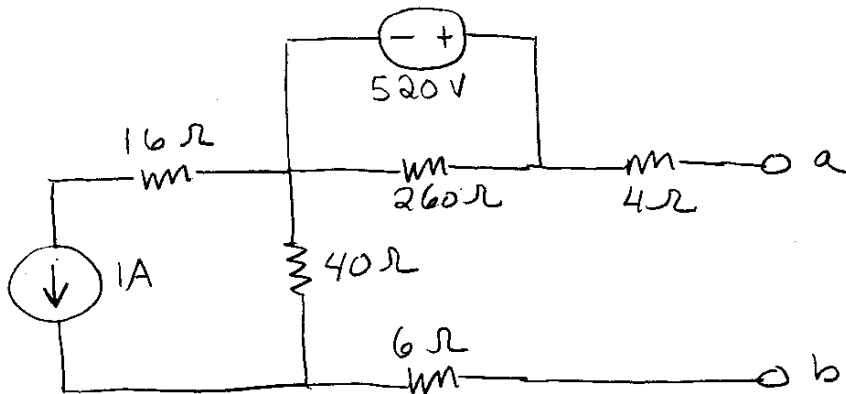
Problem 3° Use nodal analysis to find I_x .



Problem 4° Use nodal analysis to find V_Δ .



Problem 5: Find the Thévenin equivalent of the circuit with respect to terminals a + b:



Problem 6: Find the Thévenin equivalent with respect to terminals a and b:

