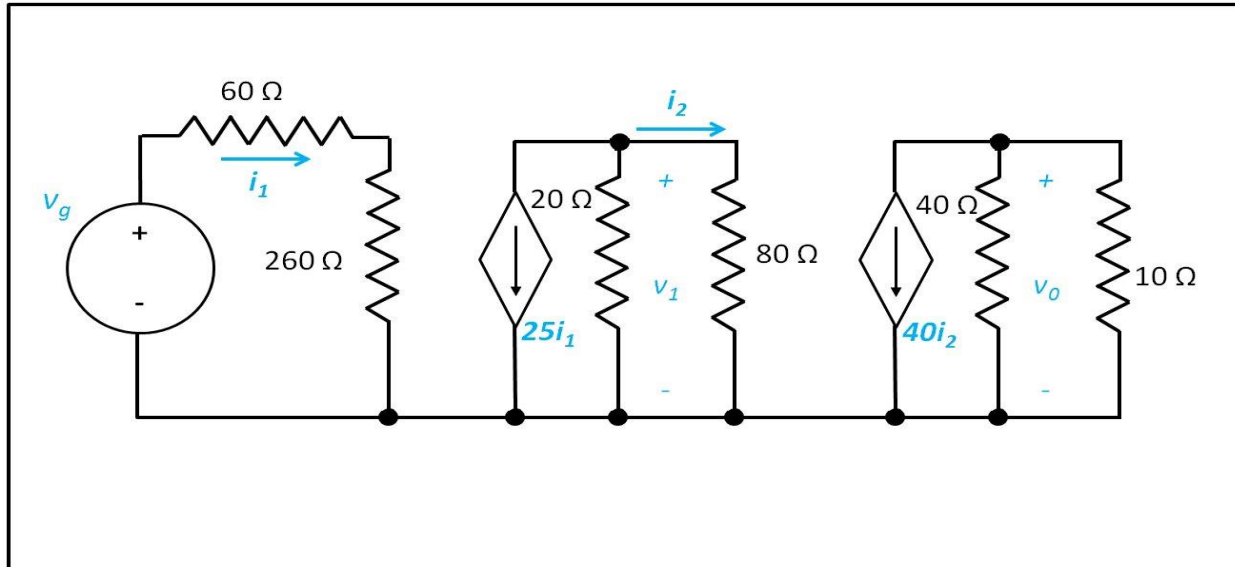


B EE 215 Winter 2024 Homework Problem Set #2  
Due Thursday, January 25<sup>th</sup> at the beginning of class

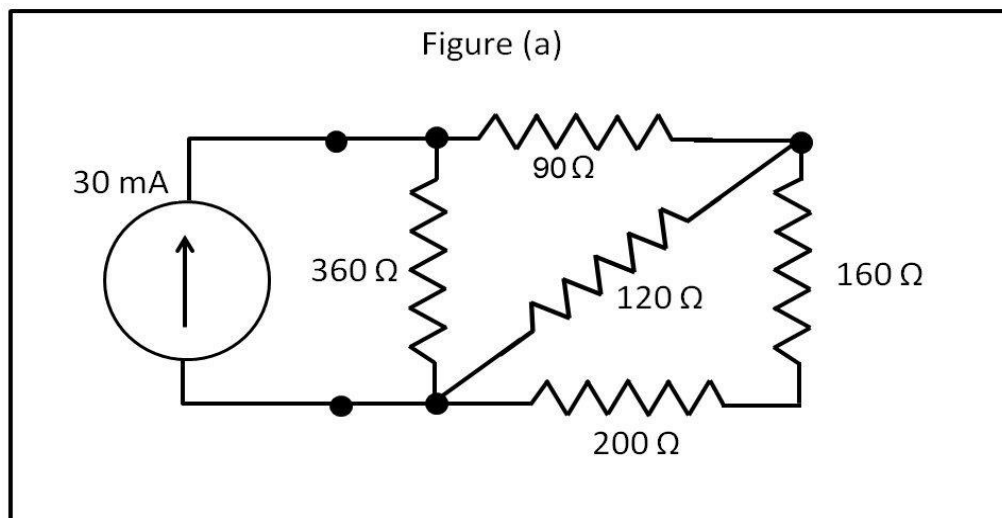
Problem #1 Find  $V_1$  and  $V_g$  in the circuit shown below when  $V_o$  equals 5 V.

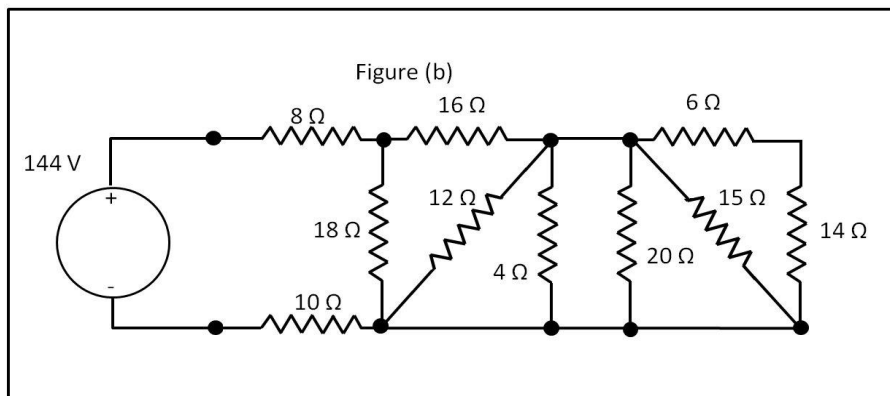
Hint: Start at the right end of the circuit and work back towards  $v_g$ .



Problem #2

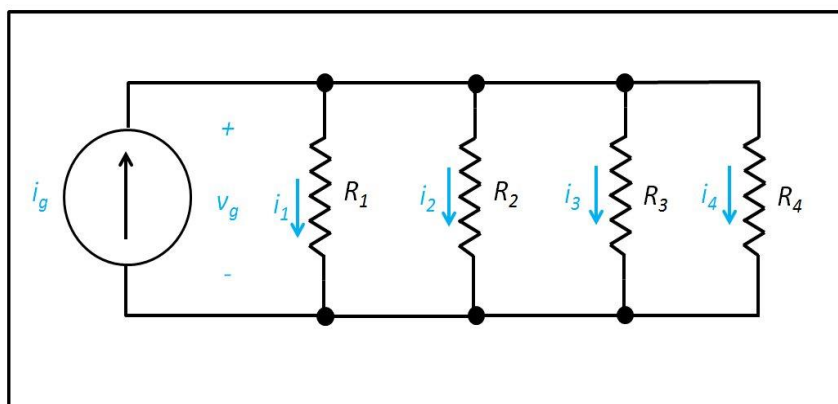
- (a) Find the equivalent resistance,  $R_{ab}$ , for each of the circuits shown below.
- (b) For each of the circuits, find the power delivered by the source.



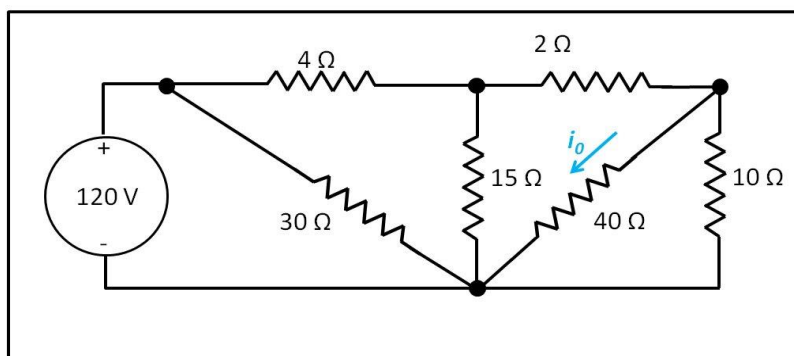


Problem #3 Specify the resistors in the circuit shown below to meet the following design criteria:

- $i_g = 8 \text{ mA}$ ;  $v_g = 4 \text{ V}$ ;  $i_1 = 2i_2$
- $i_2 = 10i_3$  ;  $i_3 = i_4$

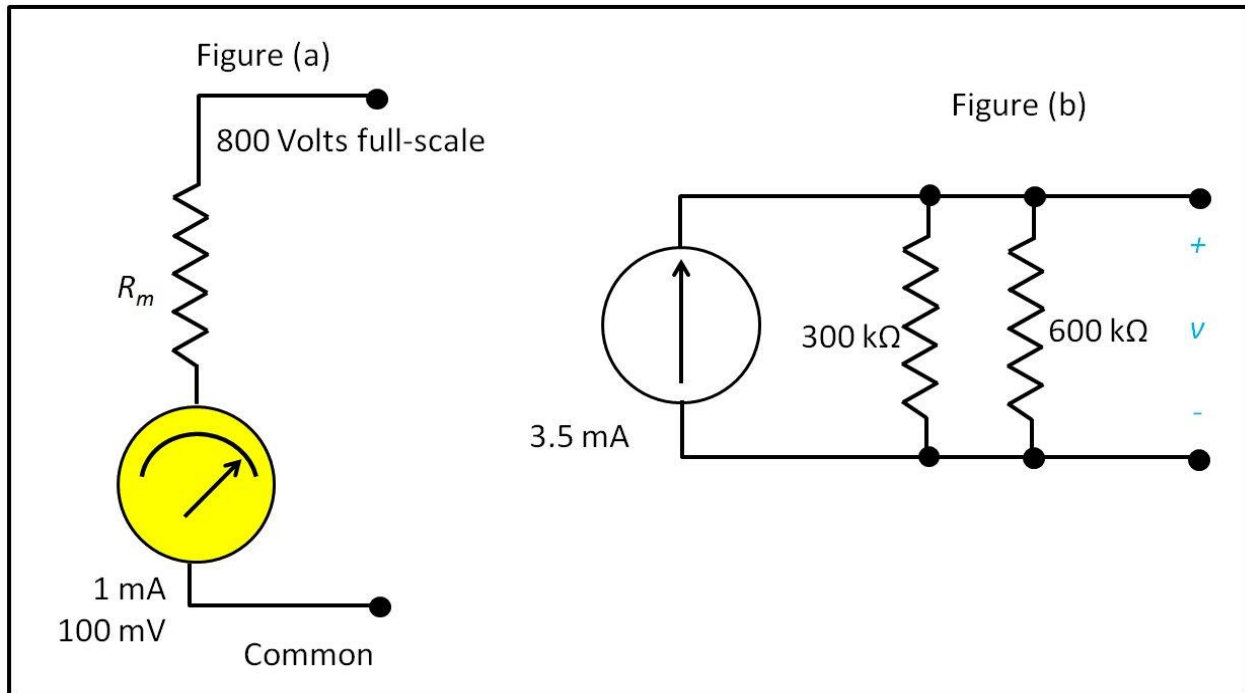


Problem #4 For the circuit shown below, calculate (a)  $i_o$  and (b) The power dissipated in the  $15 \Omega$  resistor.



### Problem #5

The voltmeter shown in the figure (a) below has a full-scale reading of 800 V. The meter movement is rated 100 mV and 1 mA. What is the percentage of error in the meter reading if it is used to measure the voltage  $v$  in figure (b) ?



### Problem #6

Find the detector current  $i_d$  in the unbalanced Wheatstone bridge shown in the figure below. You may assume that the voltage drop across the detector is negligible and may be ignored.

