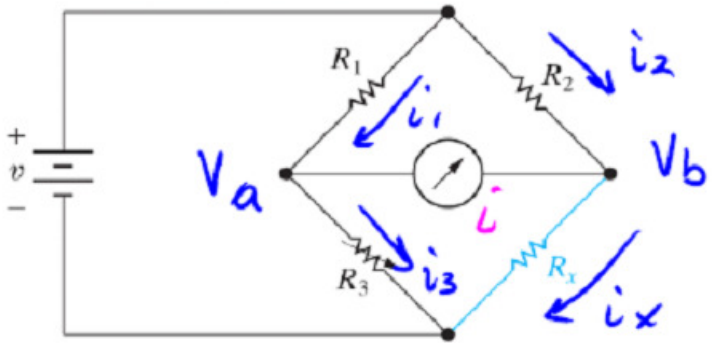
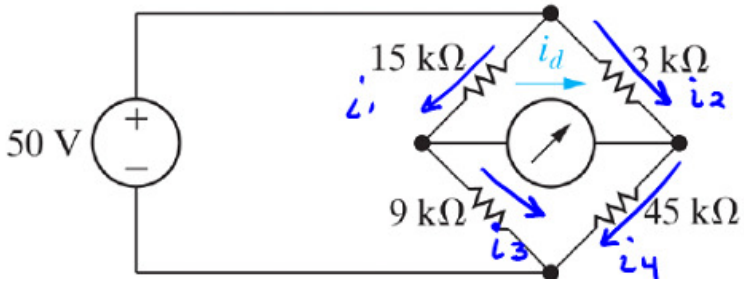
Homework Set #8
DUE Monday, March 27, 2017

1. The Wheatstone Bridge circuit shown below is energized from a 21 V source and is balanced when R_1 = 800 Ω, R_2 = 1200 Ω, and R_3 = 600 Ω.

a) What is the value of R_X?
b) What is the source current?
c) Which resistor absorbs the most power? How much power does it absorb?
d) Which resistor absorbs the least power? How much power does it absorb?



2. Find the detector current (i_d) if the voltage drop across the detector is zero (this means you can put resistors in parallel)



(Ans. -3⅓ mA)

3. Find the power dissipated in the 18 Ω resistor.
(HINT: 6/10=18/30 means the bridge is balanced and the 50 Ω resistor is shorted-out.)