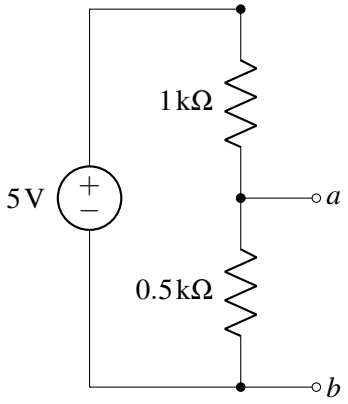
EECS 16A Designing Information Devices and Systems I
Fall 2018 Discussion 8A

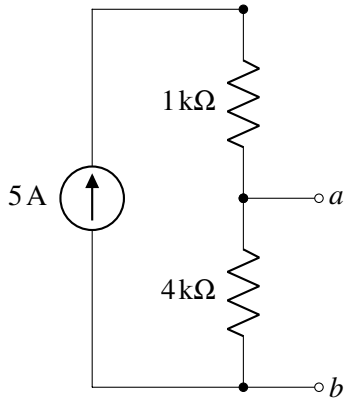
1. Equivalence

Find the Thévenin and Norton equivalents across terminals *a* and *b* for the circuits given below.

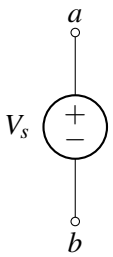
(a)



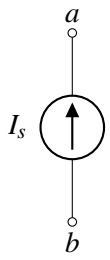
(b)



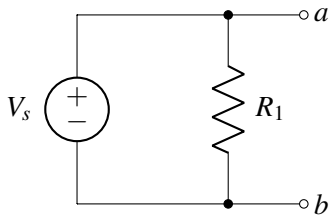
(c)



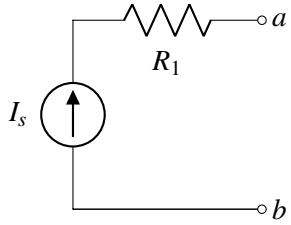
(d)



(e) (Practice)



(f) (Practice)



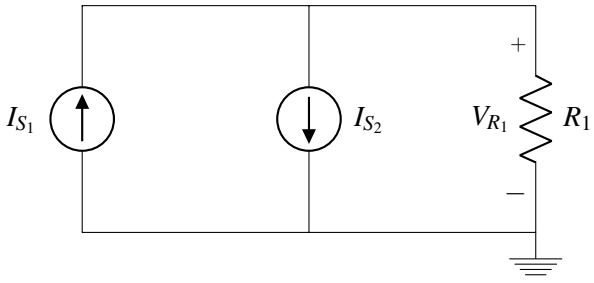
2. Super-power

For the following circuits:

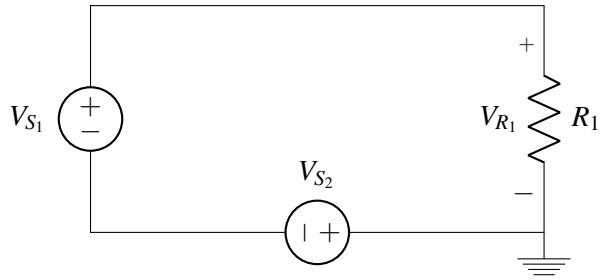
i. Use the superposition theorem to solve for the voltages across the resistors.

ii. For parts (a) and (b) only, find the power dissipated/generated by all components. Is power conserved?

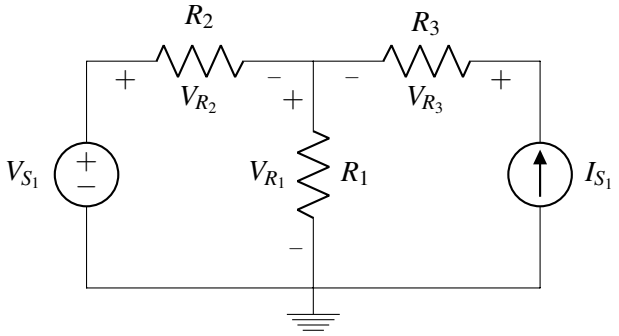
(a)



(b)

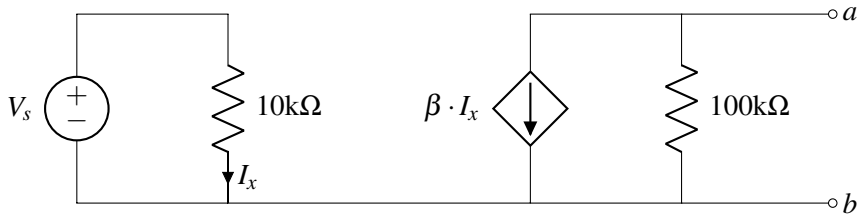


(c)



3. Equivalence

Find the Norton equivalent of the following circuit across the terminals a and b (in terms of V_s and β). Note that the current source is dependent on the current I_x.



4. Series and Parallel Combinations

For the resistor network shown below, find an equivalent resistance between the terminals A and B using the resistor combination rules for series and parallel resistors.