

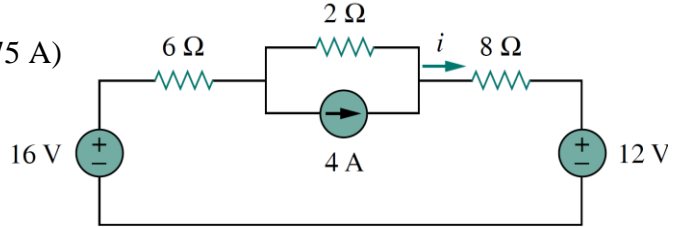
باسمه تعالی

تکلیف سری چهارم درس مدارهای الکتریکی ۱ نام استاد: خانی

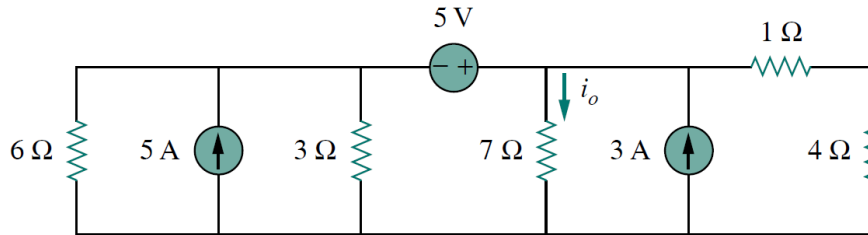
موعد تحویل: دوشنبه ۱۳۹۴/۱/۲۴ ساعت ۱۰ صبح تمامی گروه ها، اتاق مدیر گروه برق

لطفا حتما شماره گروه خود را روی پاسخ نامه بنویسید.

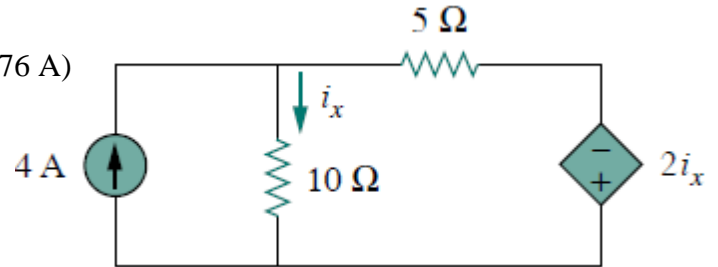
- 1- Find i in the circuit shown in front using the superposition principle. (Answer: 0.75 A)



- 2- Find i_o in the following circuit using source transformation. (Answer: 1.78 A)

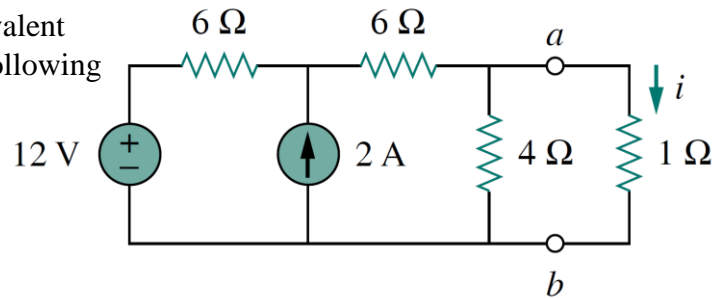


- 3- Find i_x in the circuit shown in front using source transformation. (Answer: 1.176 A)

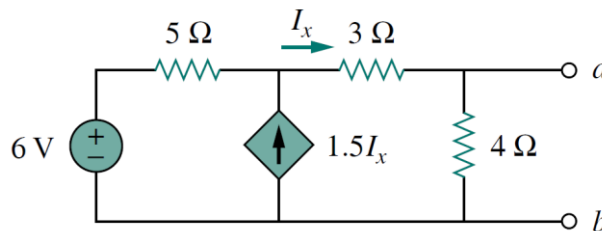


- 4- Using Thevenin's theorem, find the equivalent circuit to the left of the terminals in the following circuit. Then find i .

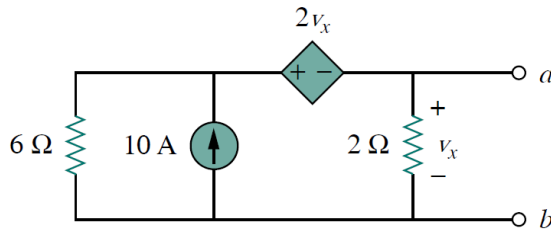
(Answer: $V_{Th}=6$ V, $R_{Th}=3$ Ω , $i=1.5$ A)



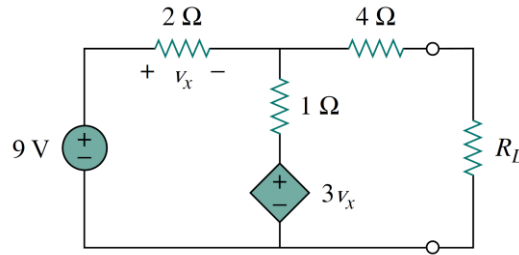
- 5- Find the Thevenin equivalent circuit of the circuit shown below to the left of the terminals. (Answer: $V_{Th}= 5.33$ V, $R_{Th}= 0.44$ Ω)



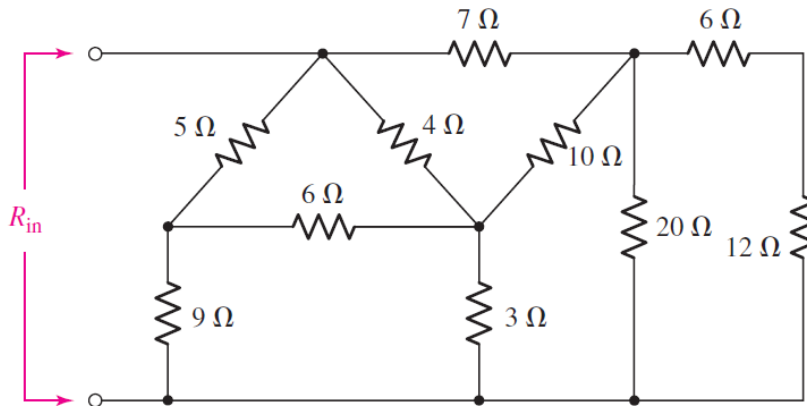
- 6- Find the Norton equivalent of the circuit shown below. (Answer: $I_N= 10$ A, $R_N= 1$ Ω)



- 7- Determine the value of R_L that will draw the maximum power from the rest of the circuit in the following circuit. Calculate the maximum power. (Answer: 4.22Ω , 2.901 W)

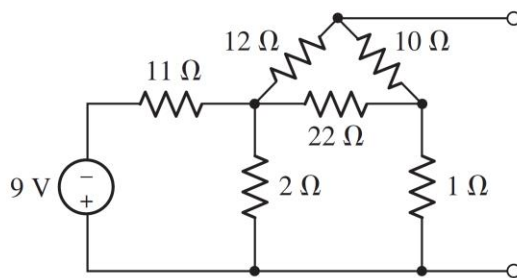


62. Employ Δ/Y conversion techniques as appropriate to determine R_{in} as labeled in Fig. 5.101.



■ FIGURE 5.101

63. (a) Determine the two-component Thévenin equivalent of the network in Fig. 5.102. (b) Calculate the power dissipated by a 1Ω resistor connected between the open terminals.



■ FIGURE 5.102