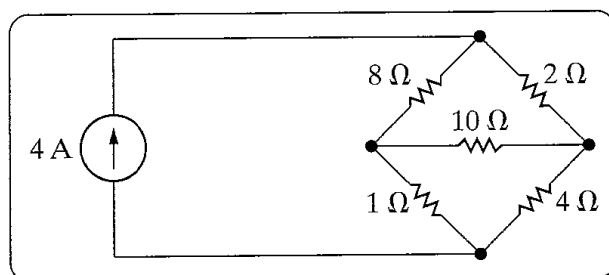


Figure P4.52



- 4.53** A $20\ \Omega$ resistor is placed in parallel with the 4 A current source in the circuit in Fig. P4.52. Assume you have been asked to calculate the power developed by the current source.

P

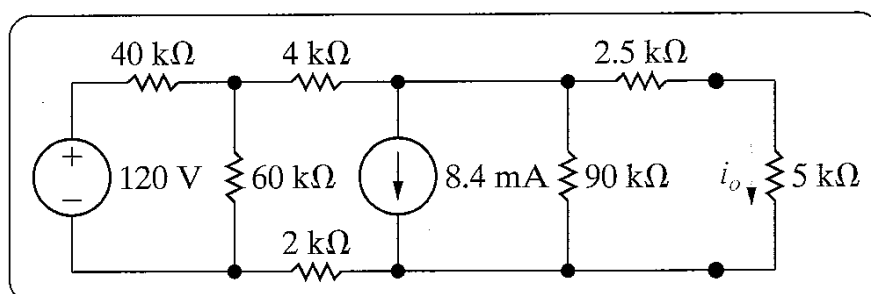
- Which method of circuit analysis would you recommend? Explain why.
- Find the power developed by the current source.

4.56

P

- Find the current in the $5\ \text{k}\Omega$ resistor in the circuit in Fig. P4.56 by making a succession of appropriate source transformations.
- Using the result obtained in (a), work back through the circuit to find the power developed by the 120 V source.

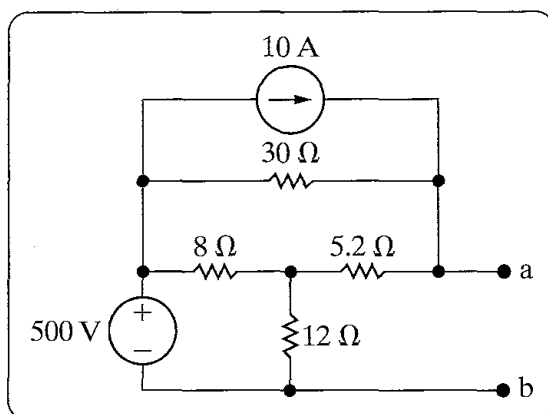
Figure P4.56



- 4.61** Find the Thévenin equivalent with respect to the terminals a,b for the circuit in Fig. P4.61.



Figure P4.61

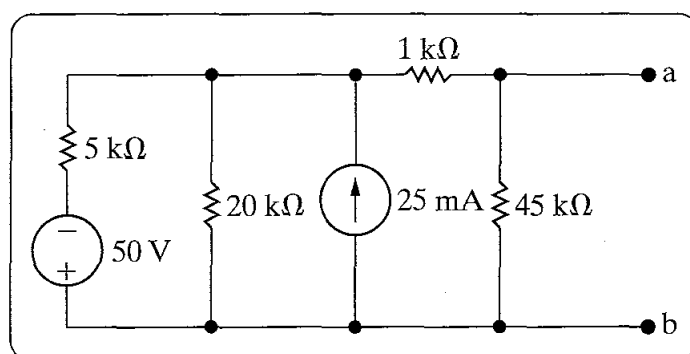


- 4.63** A voltmeter with a resistance of $85.5 \text{ k}\Omega$ is used to measure the voltage v_{ab} in the circuit in Fig. P4.63.



- What is the voltmeter reading?
- What is the percentage of error in the voltmeter reading if the percentage of error is defined as $[(\text{measured} - \text{actual})/\text{actual}] \times 100$?

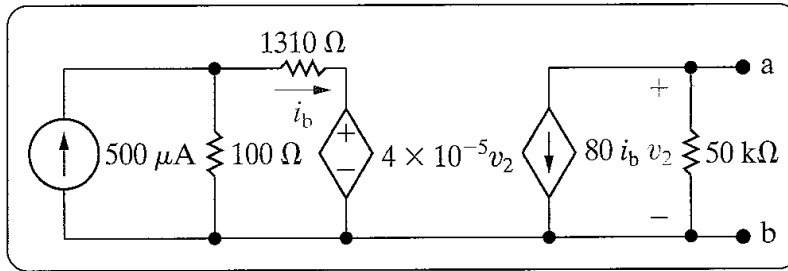
Figure P4.63



- 4.65** Determine the Thévenin equivalent with respect to the terminals a,b for the circuit shown in Fig. P4.65.



Figure P4.65

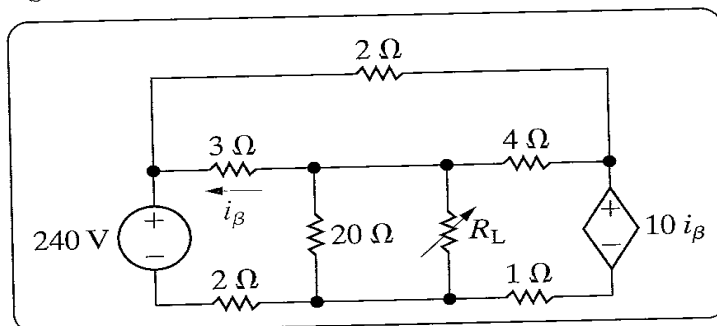


- 4.76** The variable resistor (R_L) in the circuit in Fig. P4.76 is adjusted for maximum power transfer to R_L .



- Find the numerical value of R_L .
- Find the maximum power transferred to R_L .

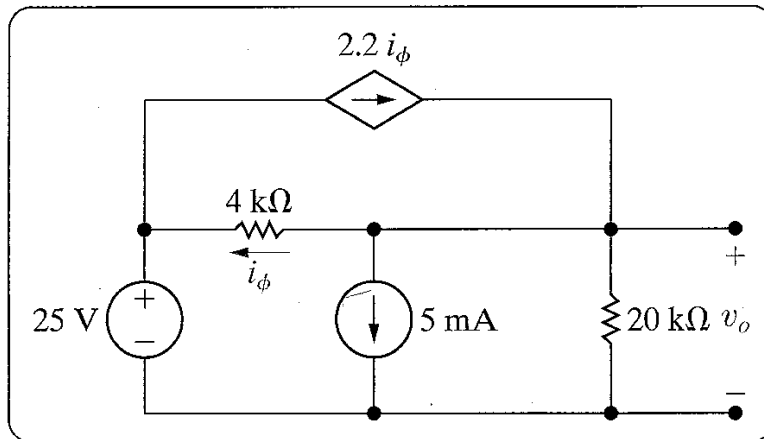
Figure P4.76



- 4.90** Use the principle of superposition to find v_o in the circuit in Fig. P4.90.

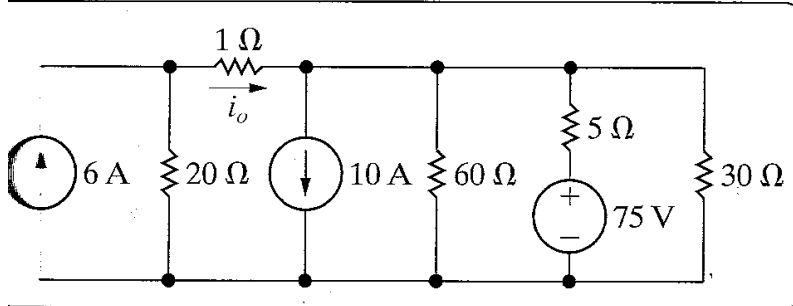


Figure P4.90



- P4.92** Use the principle of superposition to find the current i_o in the circuit shown in Fig. P4.92.

Fig. P4.92



- P4.93**
- a) In the circuit in Fig. P4.93, before the 5 mA current source is attached to the terminals a,b, the current i_o is calculated and found to be 3.5 mA. Use superposition to find the value of i_o after the current source is attached.
- b) Verify your solution by finding i_o when all three sources are acting simultaneously.