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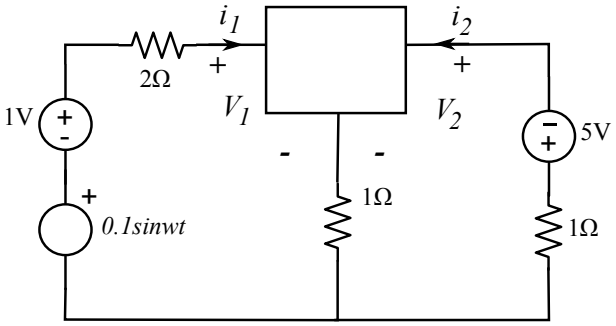
Basics of Electrical Circuits
Homework-II
(Due : 24/12/2012)

December 11, 2012

1. Nonlınear 3-terminal element is defined by $V_1 = i_1$, $V_2 = V_1^2 + i_2$ and $i_1 > 0$. (a)Determine the operating point of the 3-terminal element. (b) Draw linear small signal equivalent circuit using only 2-terminal circuit elements.(c) Find the approximate solution of $i_2(t)$.

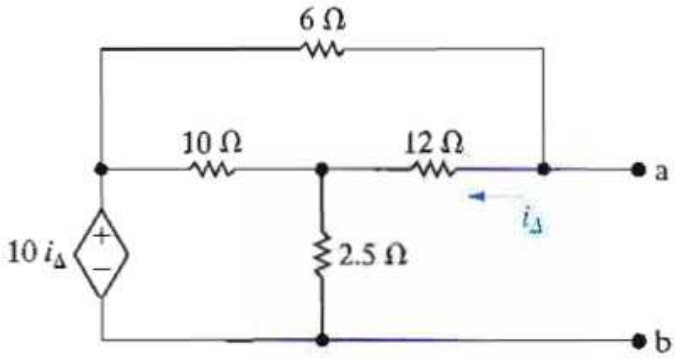


2. .

4.77 Find the Thévenin equivalent with respect to the terminals a,b in the circuit in Fig. P4.77.

PSPICE

Figure P4.77



3. .

4.93 Use the principle of superposition to find the current i_o in the circuit in Fig. P4.93.

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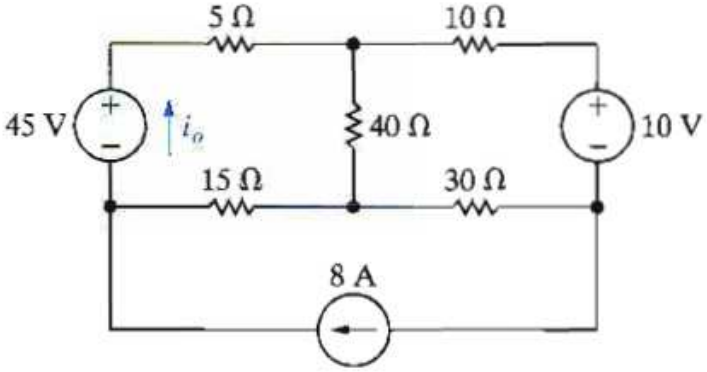
Figure P4.93



4. .

4.72 Find the Thévenin equivalent with respect to the terminals a,b for the circuit seen in Fig. P4.72.

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Figure P4.72