Circuits II
EE221
Unit 8
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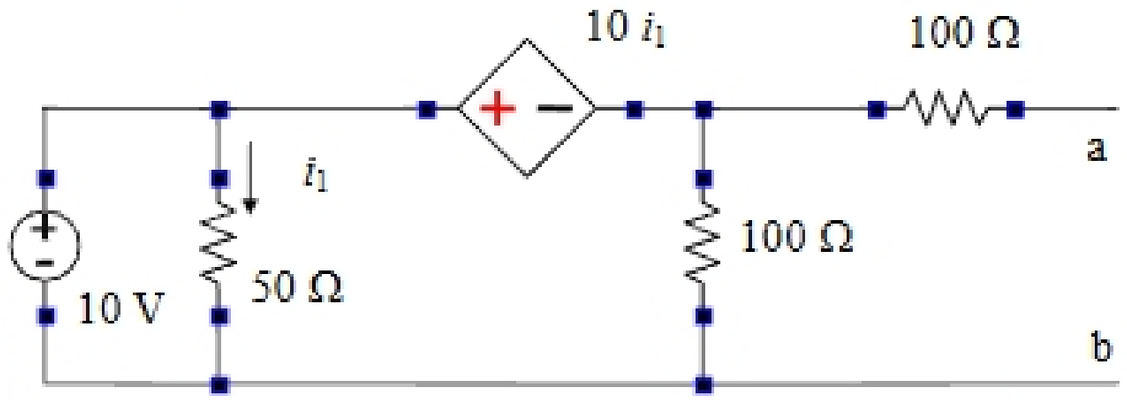
2 Port Networks –Impedance/Admittance, Transmission, and Hybird Parameters

2-Port Circuits

- Network parameters characterize linear circuits that have both input and output terminals, in terms of linear equations that describe the voltage and current relationships at those terminals. This model provides critical information for understanding the effects of connecting circuits, loads, and sources together at the input and output terminals of a two-port circuit. A similar model was used when dealing with one-port circuits.

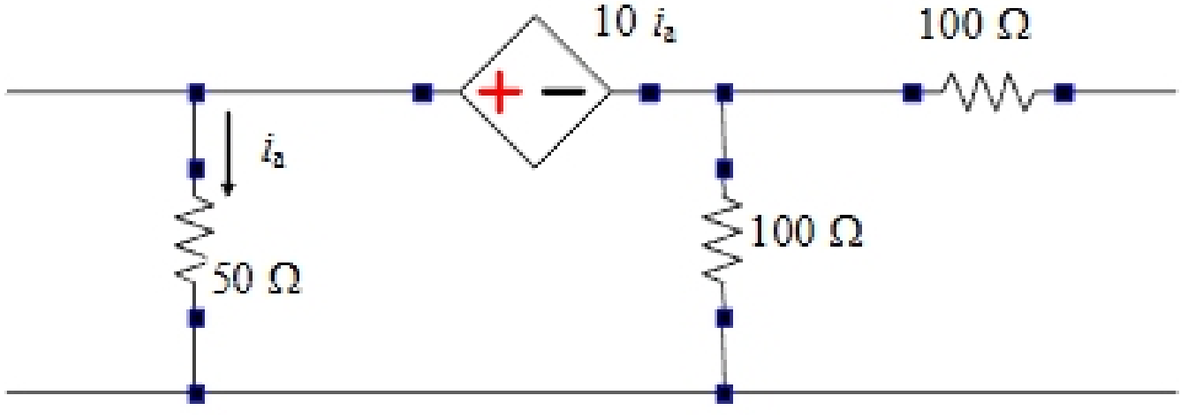
- Review example: Thévenin and Norton Equivalent Circuits:



Show that V_{oc}=8 V, I_{sc} = 0.08 A, and R_{th} = 100

2-Port Circuits:

Now take away the source from the previous example:



- *Why wouldn't it make sense to talk about a Thévenin or Norton equivalent circuit in this case?*
- The Thévenin and Norton models must be extended to describe circuit behavior at two ports.
- Label the terminal voltage and currents as v_1, i_1, v_2, and i_2 and develop a mathematical relationship to show their dependencies.