***CSE250: Circuits and Electronics***

***Spring 2023***

***Practice Problems Set 3***



Thevenin’s Theorem, Norton’s Theorem, and Maximum Power Transfer Theorem



| 1. Measurements made on terminals of a linear circuit in , which is known to be made up only of independent voltage sources and current sources, and resistors, yield the current-voltage characteristics shown in figure .   Find the Thevenin equivalent of this circuit. | | | ***Answer:*** | |
| --- | --- | --- | --- | --- |
| 1. Find the Thevenin equivalent circuit with respect to the terminals for the circuit shown. | | | ***Answer:*** | |
| 1. Find the Norton equivalent at the terminals marked in the circuit below. | | | ***Answer:*** | |
| 1. For the network shown below, find the Thevenin equivalent circuit for the network external to the resistor. | | | ***Answer:*** | |
| * 1. Find the Norton equivalent circuit external to points and .   2. Find the magnitude and polarity of the voltage across the Ω resistor using the results of part (a). | ***Answer:*** | | | |
| 1. Find the Thevenin equivalent with respect to the terminals . | | ***Answer:*** | | |
| 1. Find the Thevenin equivalent at terminals of the circuit shown below. | | ***Answer:*** | | |
| 1. Find the Thevenin equivalent with respect to the terminals . | | ***Answer:*** | | |
| 1. The variable resistor is adjusted for maximum power transfer to .    1. Find the value of .    2. Find the maximum power that can be delivered to . | | ***Answer:***  i.  ii. | | |
| 1. The variable resistor is adjusted for maximum power transfer to .    1. Find the value of .    2. Find the maximum power that can be delivered to | | ***Answer:***  i.  ii. | | |
| 1. Find the maximum power transferred to resistor . | | | | **Answer:** |