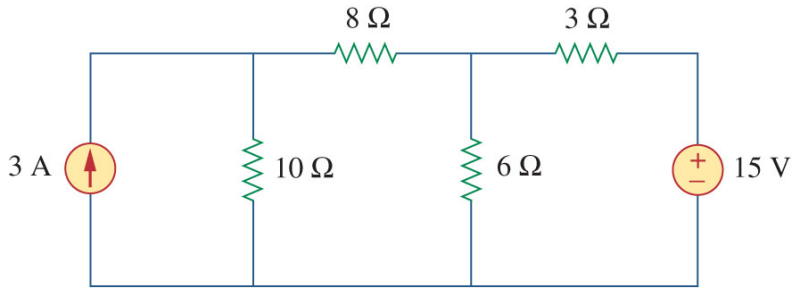
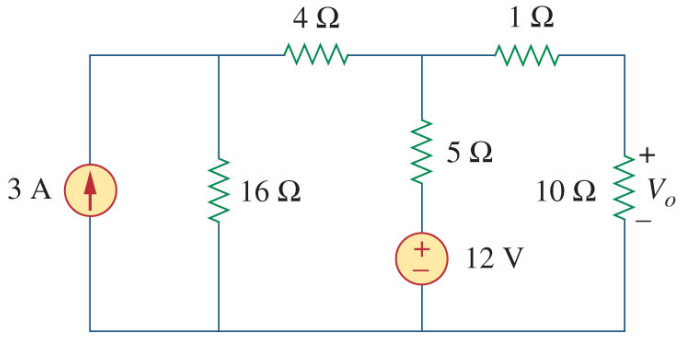
EGR 220 HW 4 Due Feb 27

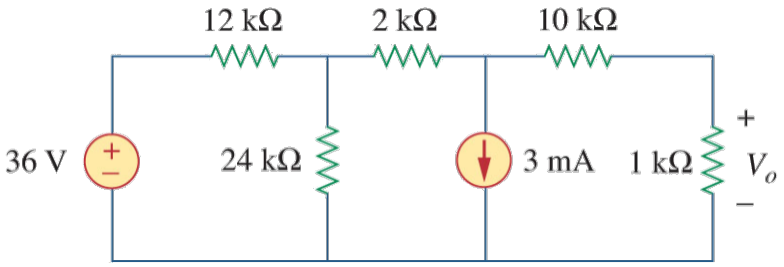
Problem 1
Using **source transformation**, find the current through and power absorbed by the 8 Ω resistor.



Problem 2
Find V_o using Thevenin's theorem.

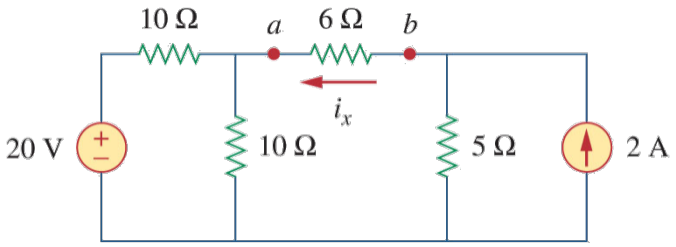


Problem 3
Find V_o using Thevenin's theorem.



Problem 4

Find the maximum power that can be delivered to the 6Ω resistor. Show all your steps, including finding the necessary Thevenin equivalent circuit. You can use the expression for the maximum power in the text, but be sure you understand how that equation is developed.



Problem 5

The Thevenin equivalent at terminals *a*-*b* of the linear network shown below is to be determined by measurement.

When a 10 kΩ resistor is connected to terminals *a*-*b*, the voltage V_{ab} is measured as 6 V. When a 30 kΩ resistor is connected to the terminals, V_{ab} is measured as 12V.

Determine:

a) The Thevenin equivalent at terminals *a*-*b*.
b) V_{ab} when a 20 kΩ resistor is connected to terminals *a*-*b*.
c) The maximum power that can be delivered to a load from this electrical box