

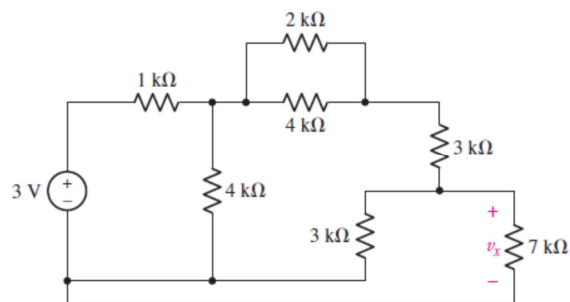
## LE 230 Homework : Graph Theory

**Please show all details of your solutions.**

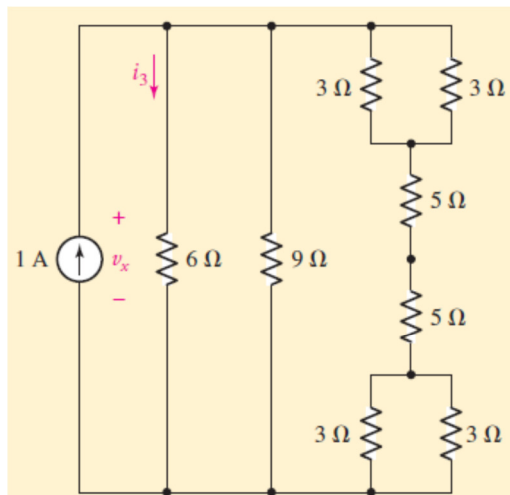
Consider the electrical networks in the figures below.

- Draw a directed graph.
- Specify all trees and corresponding cotrees.
- Write the incidence matrix and a reduced incidence matrix.
- Choose a tree from (b), find fundamental circuits and write corresponding f-circuit matrix.
- Choose a corresponding cotree of the tree chosen in (d), find fundamental cut-sets and write f-cutset matrix.
- Use f-circuit matrix (KVL), reduced incidence matrix (KCL) or f-cutset matrix (KCL) to construct matrix equation governing the network, then find the solution.

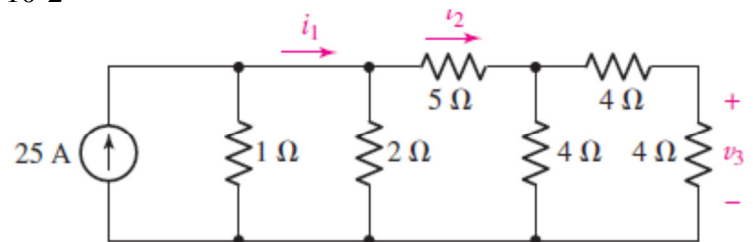
10-1



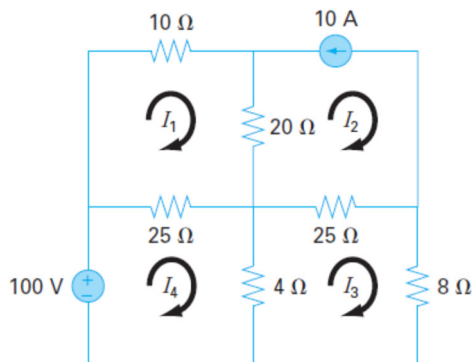
10-3



10-2



10-4



10-5

