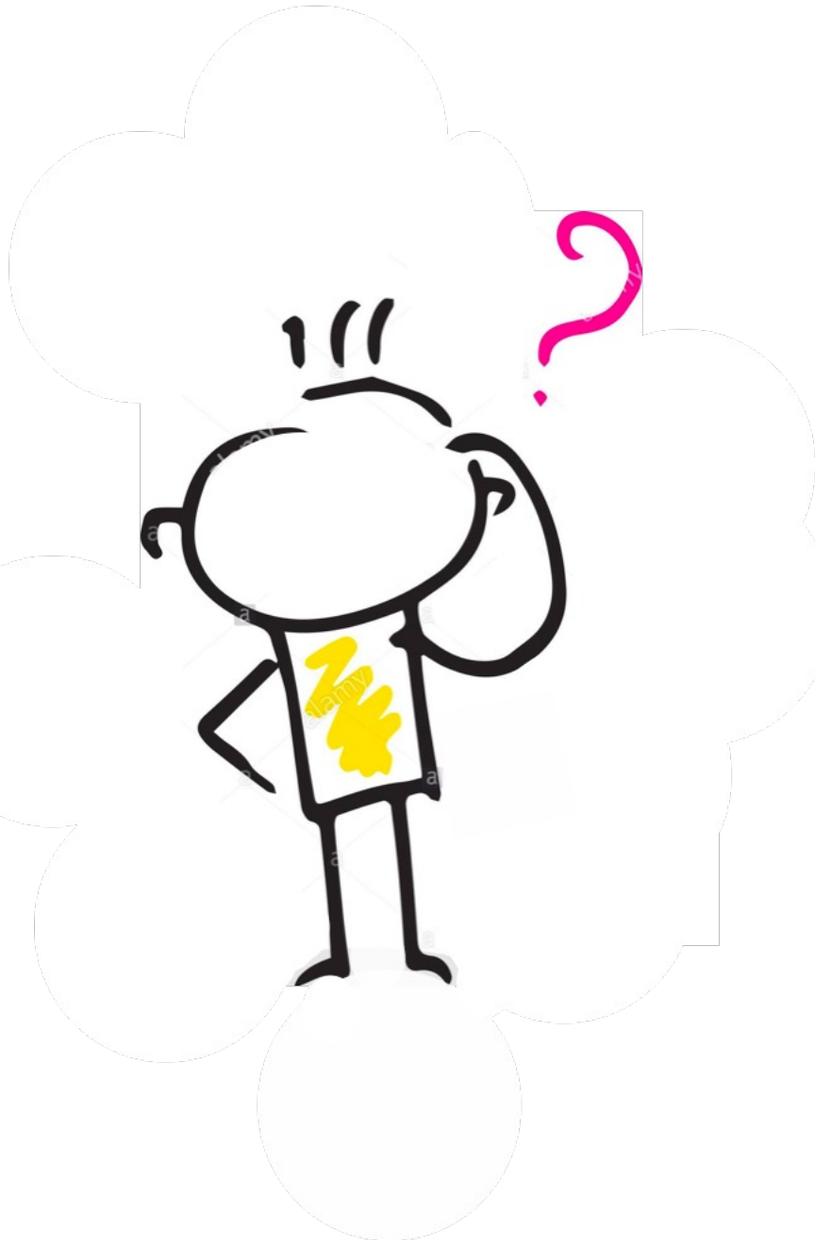
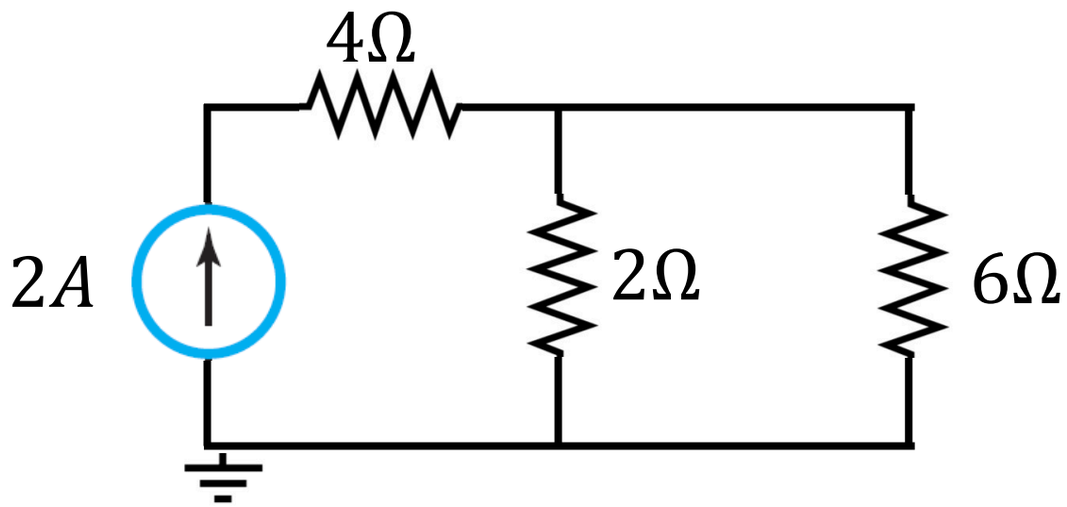
# Last Class…

1. What is a voltage divider and what is a current divider?



2. What is the current across the $2\Omega$ resistor?



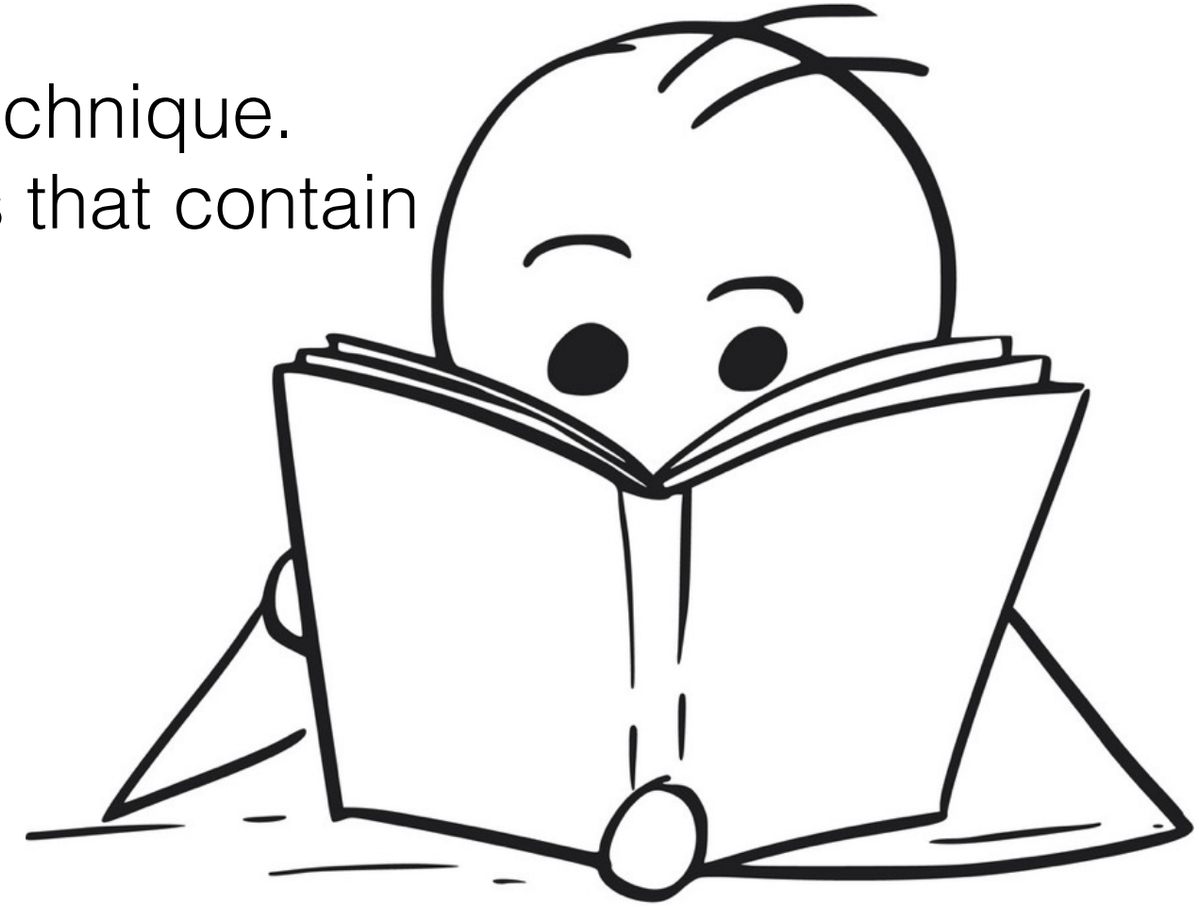
THE OHIO STATE UNIVERSITY

COLLEGE OF ENGINEERING

# Node Voltage Analysis

# This Lecture…

- Learning Objectives:
  - Apply the node-voltage analysis technique to linear electric circuits.
  - Identify a super-node.
  - Apply the node-voltage technique. to analyze electric circuits that contain super-nodes.



# Node Voltage Method

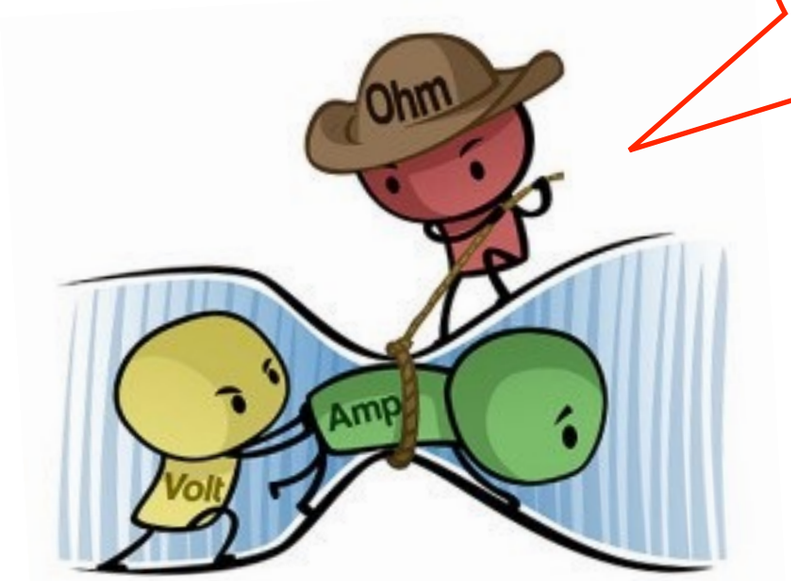
1. Identify how many nodes there are and assign variables to each of them.

Mainly used to solve for node voltages.

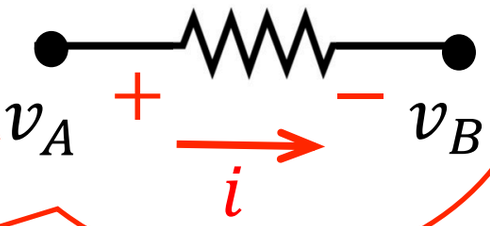
2. Select a reference node.

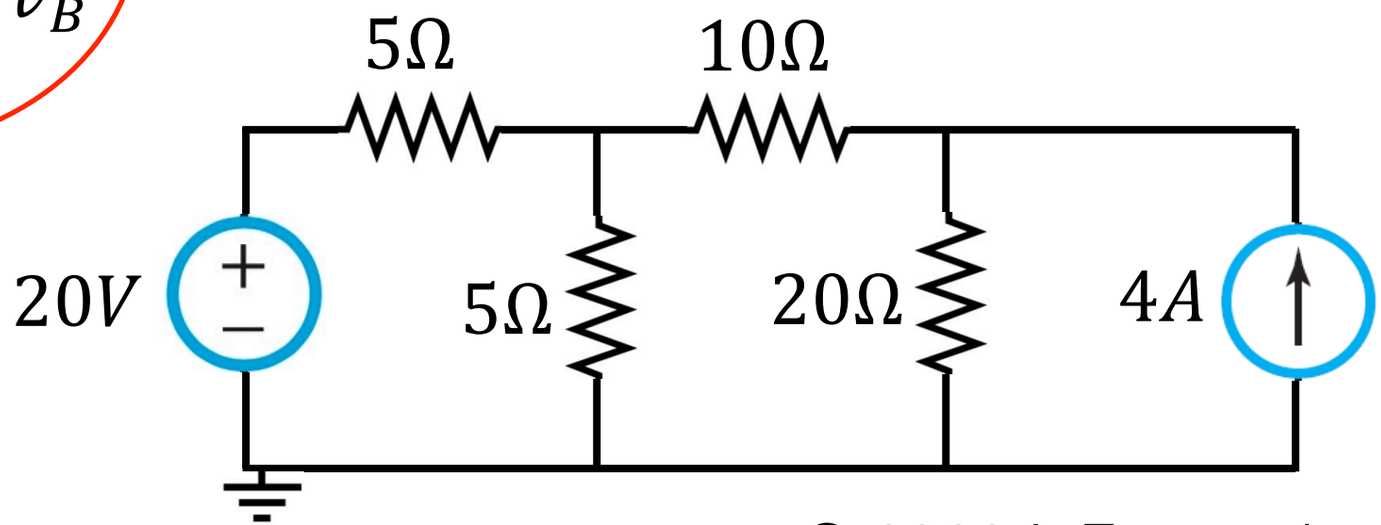
3. Identify if the voltage on any of the nodes is known.

4. Assume a direction for the current on each of the elements.




Recall that:



# Node Voltage Method

1. Identify how many nodes there are
   and assign variables to each of them.

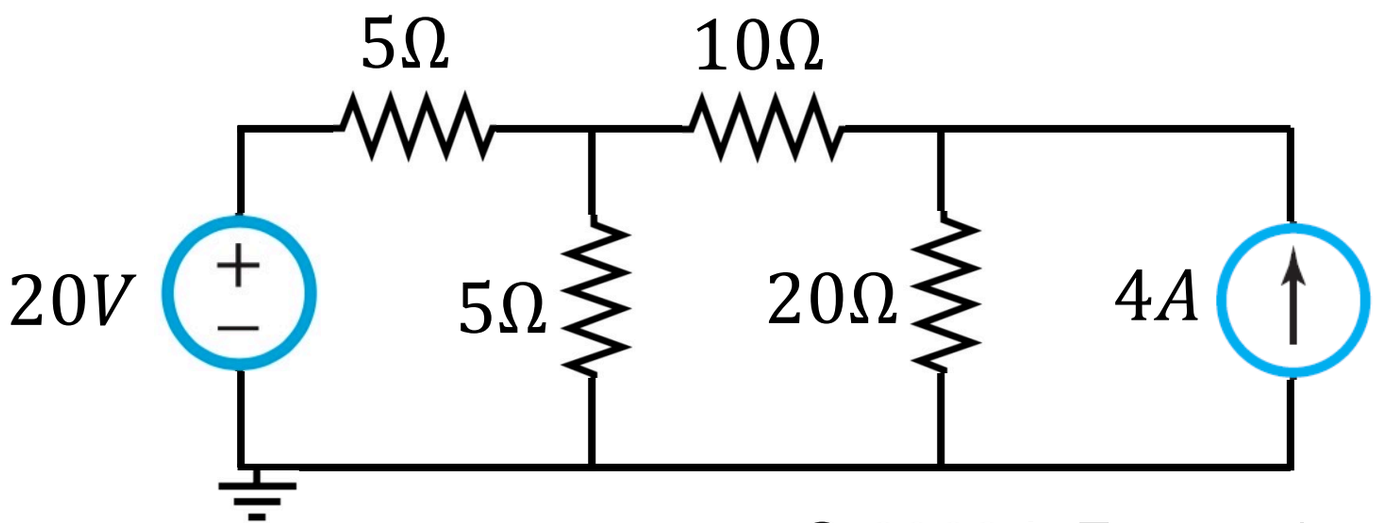
2. Select a reference node.

3. Identify if the voltage on any of the nodes is known.

4. Assume a direction for the current on each of the elements.

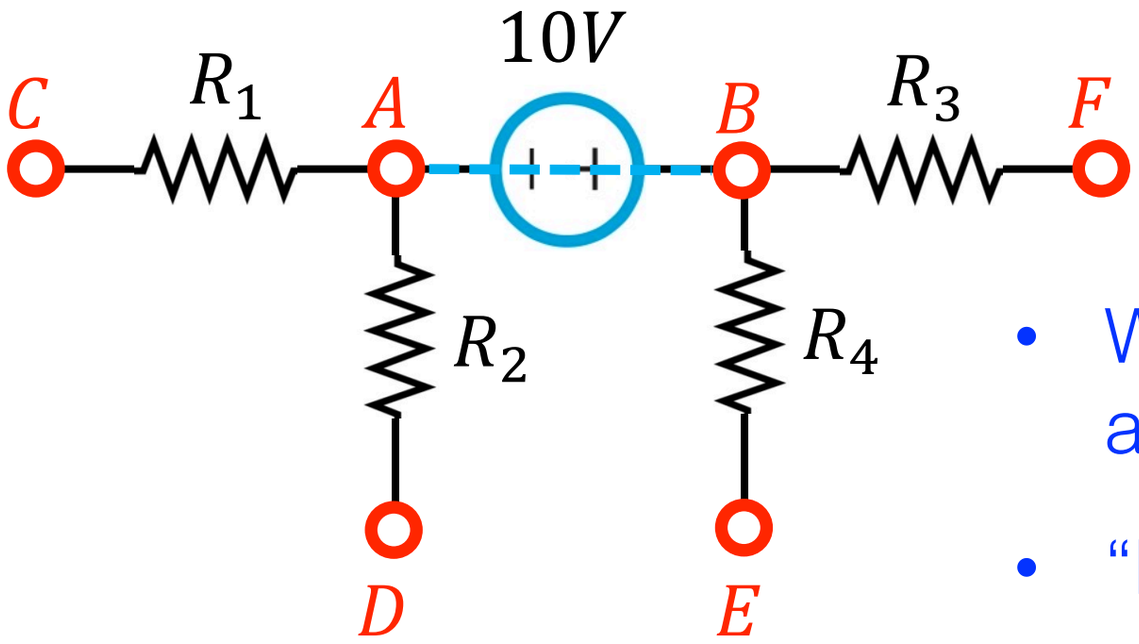
5. Apply KCL to all remaining nodes.

6. Solve.



# Super-node

- Non-grounded voltage source.




- We do not know the current flowing across the voltage source.
- “Remove the voltage source.”

# Example

Using node voltage analysis, find the voltage across $R_4$.