# EELE 250: Circuits, Devices, and Motors

Lecture 5

# Assignment Reminder

- Read 2.4 - 2.7
- Practice problems:
  - •P2.34, P2.36, P2.37, P2.48, P2.49, P2.53
  - •P2.67, P2.68, P2.71
- D2L Quiz #2 by 5PM on Friday.  NOTE that the quiz requires equation solving, so be ready to do linear algebra!
- **For next week:  review Thevenin and Norton equivalent circuits (2.6 and 2.7)**

# Circuit Analysis

- General techniques to find currents and voltages in electrical networks

- Use KVL, KCL, and Ohm's Law

- Remember: voltages and currents can be positive or negative, so be meticulous with the math!
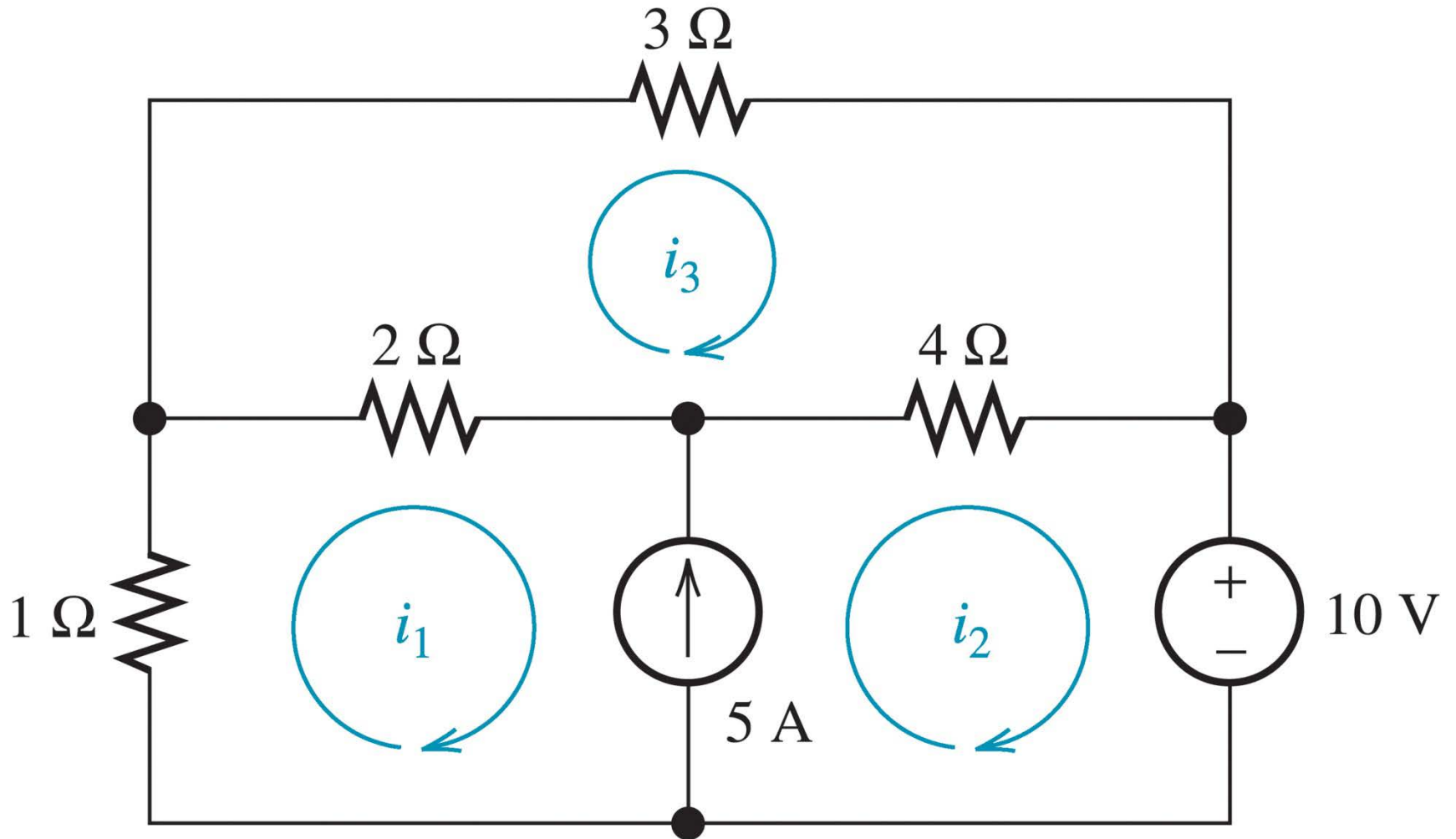
# Loop-Voltage Analysis

- Identify each mesh (the embedded loops) in the circuit

- Label each mesh with a mesh current

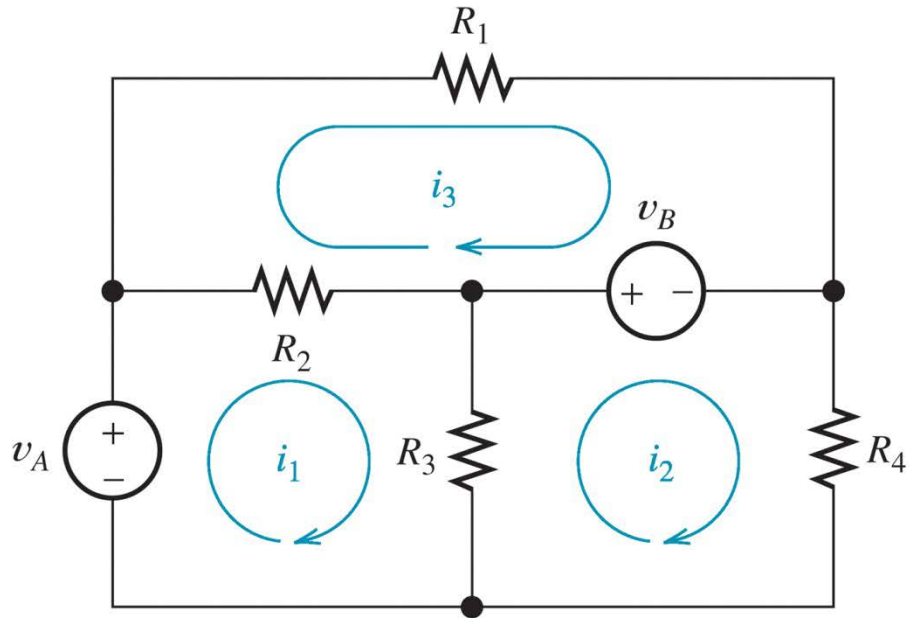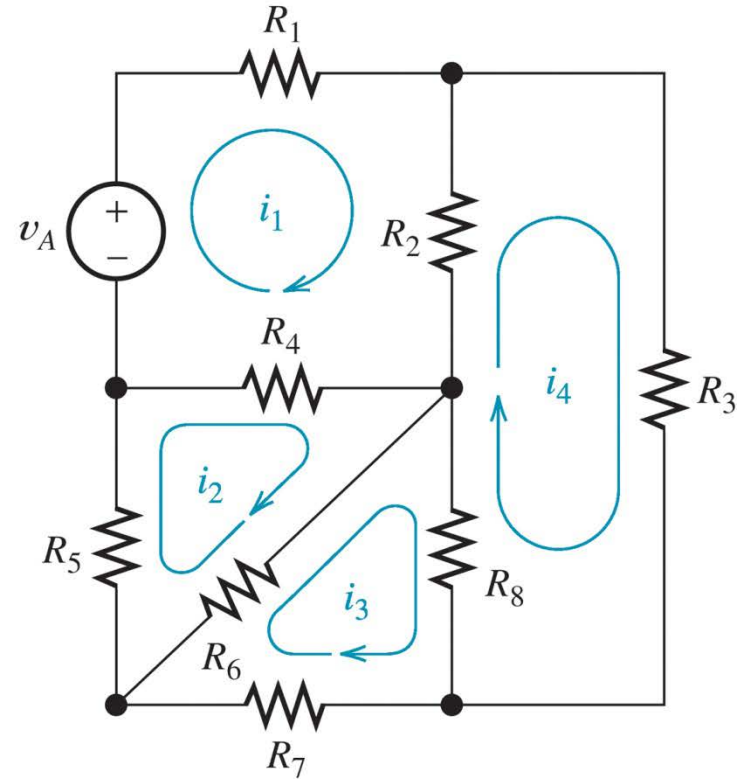- Write a KVL expression for each loop, and solve for the unknown voltages

# Loop Voltage Example
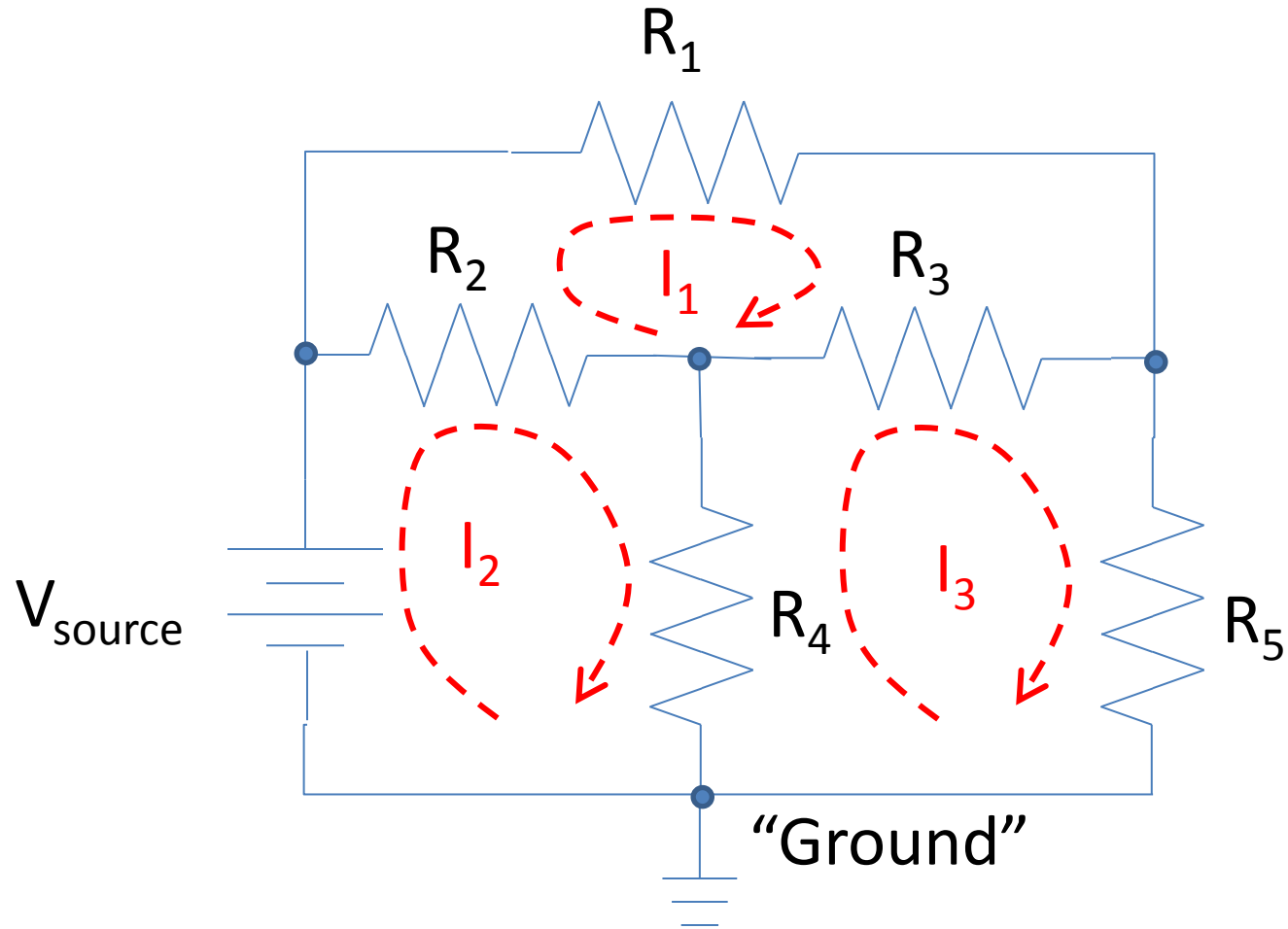
# Loop Voltage Example

# Loop Voltage Examples



(a)

(b)

# Summary and Review

- Loops
- Assign loop unknown currents
- Identify any known loop currents
- Write KVL expressions
- Solve for the unknowns
- Remember to keep track of the signs (positive and negative)!!