EELE 250: Circuits, Devices, and Motors

Lecture 5

Assignment Reminder

- Read 2.4 - 2.7
- Finish all Chapter 1 and Chapter 2 practice
- D2L Quiz #2 by 11AM on Monday. 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

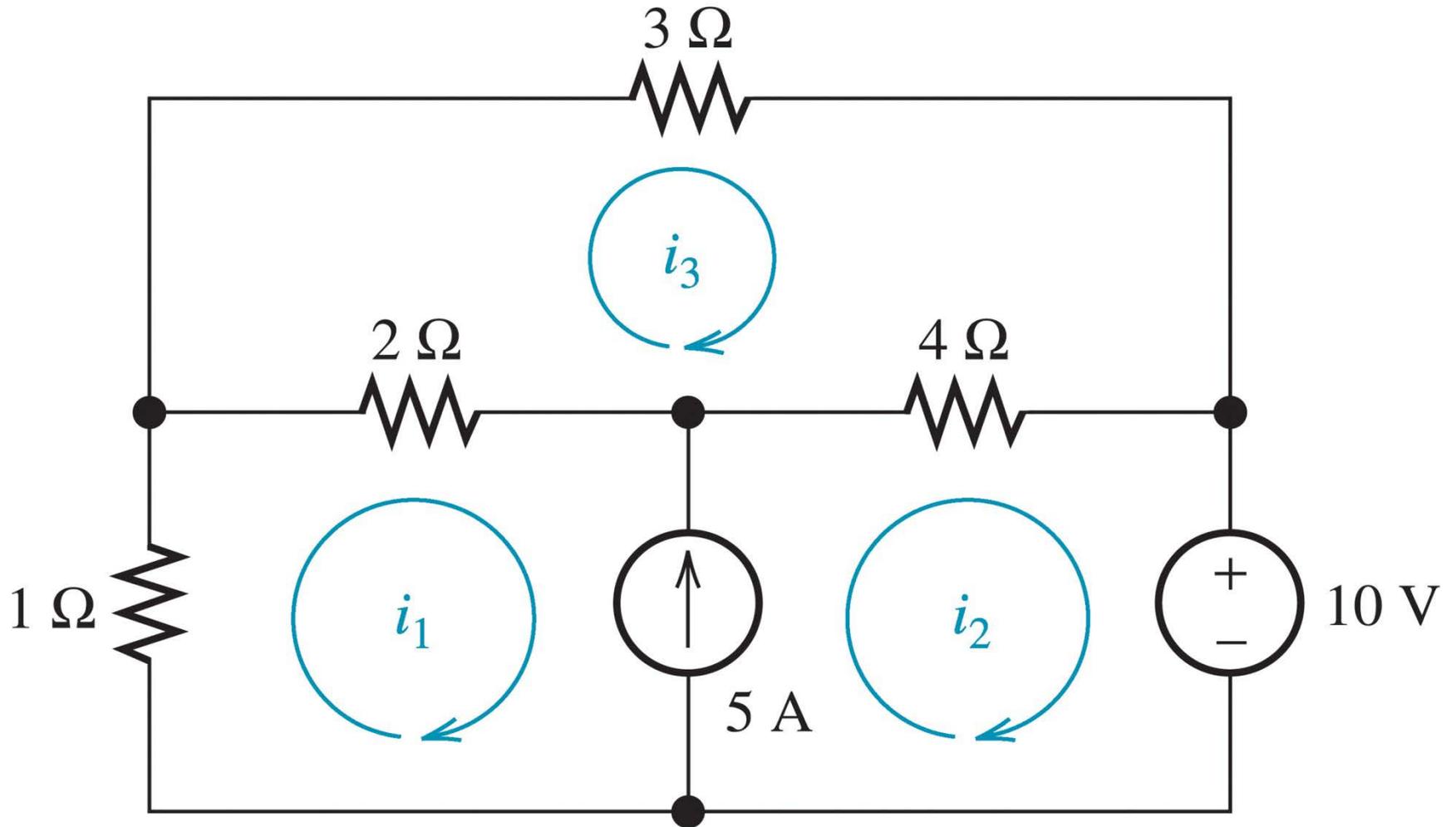- Remember: voltages and currents can be positive or negative, so be meticulous with the math!

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
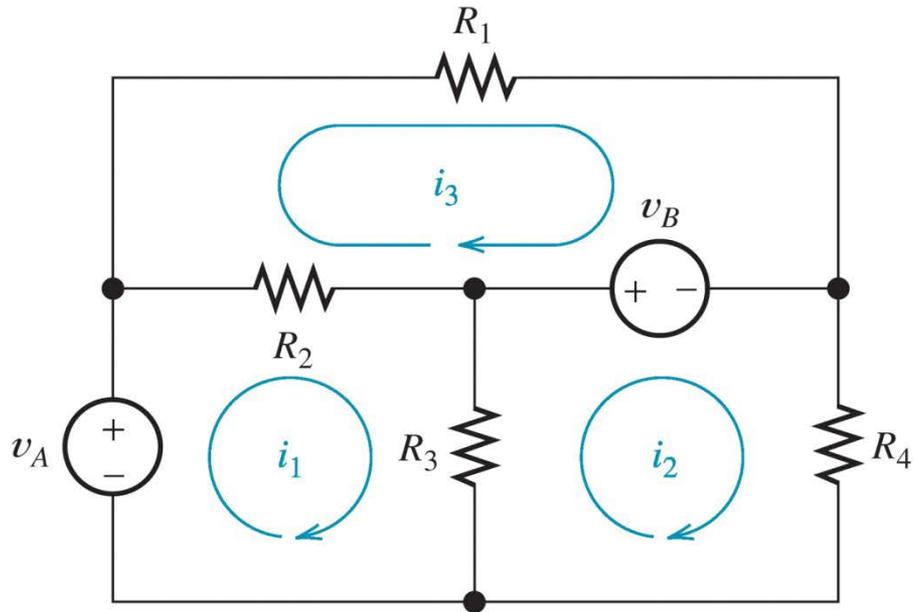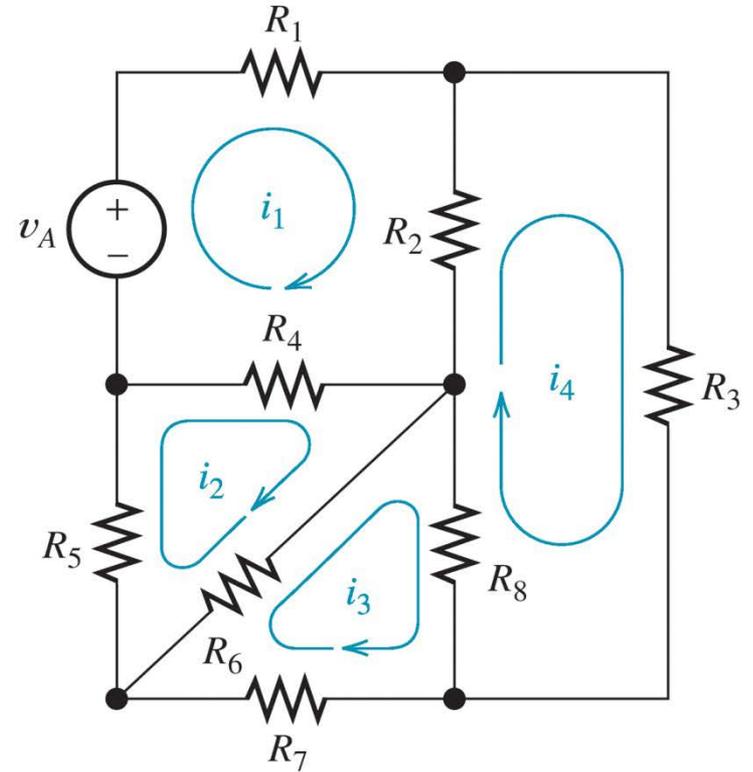
Loop Voltage Example
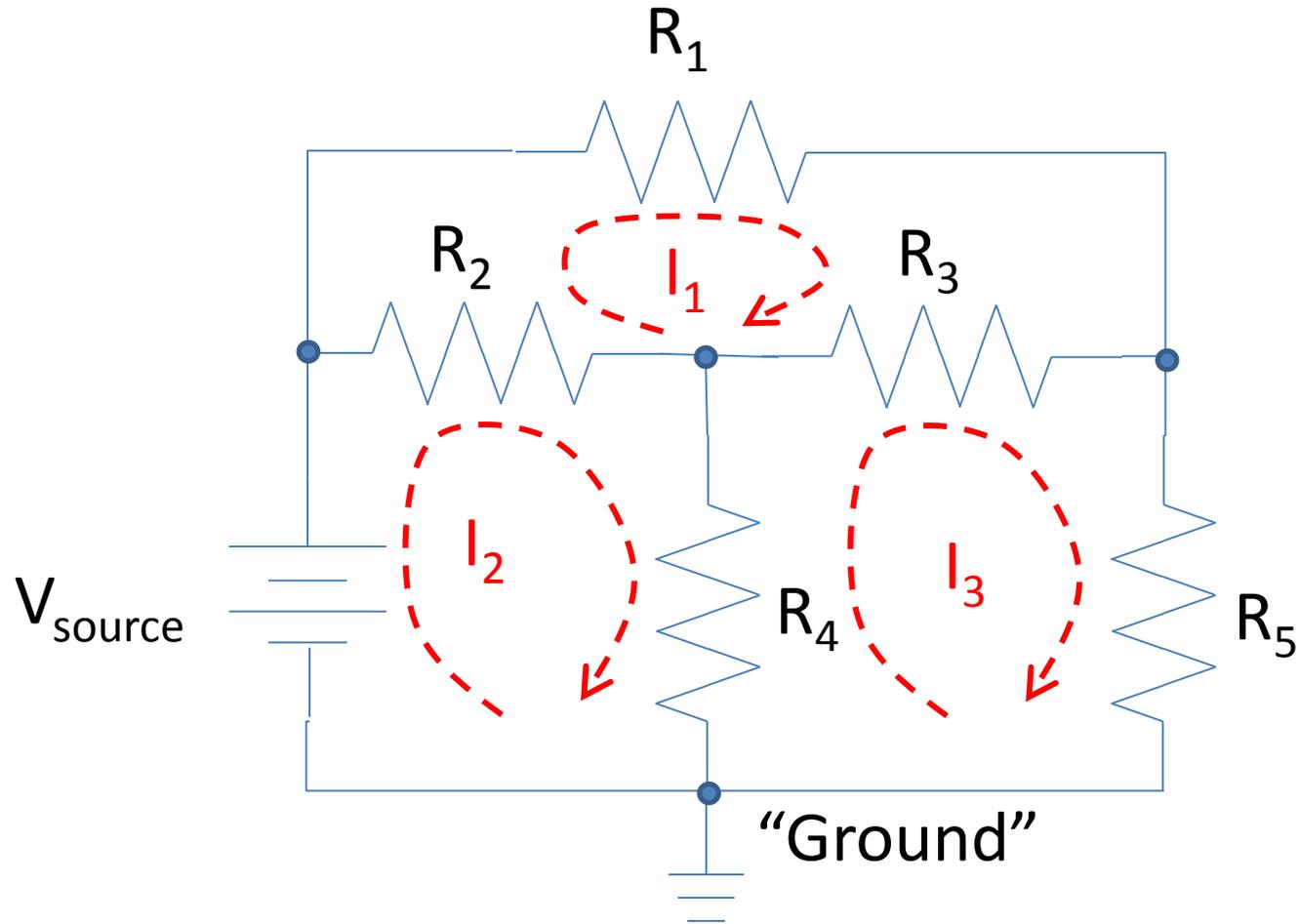
Loop Voltage Example

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)!!