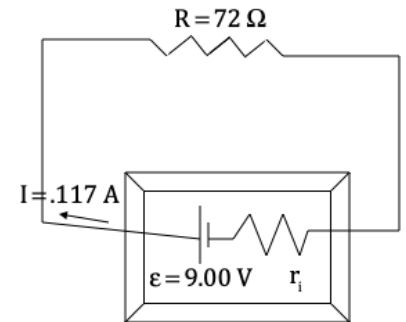


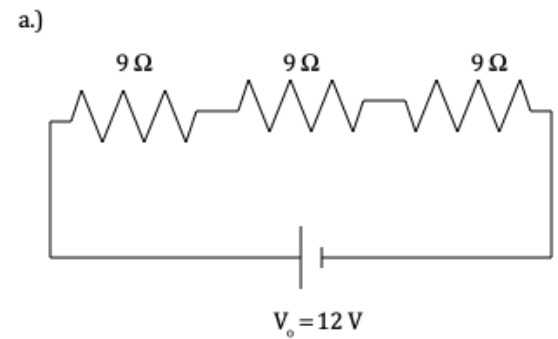
Chapter 18 XtraWrk – D.C. Circuits

18.1) For the circuit shown to the right, determine the power supply's internal resistance.

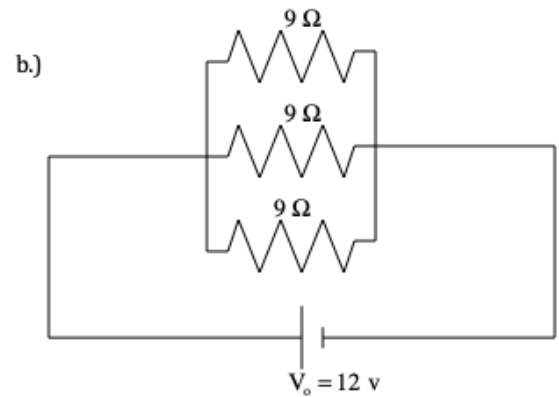


18.2) Consider the two circuits shown to the right.

- a.) For Circuit “a”, determine the equivalent resistance of the resistor combination.
- b.) Determine the current in each element.

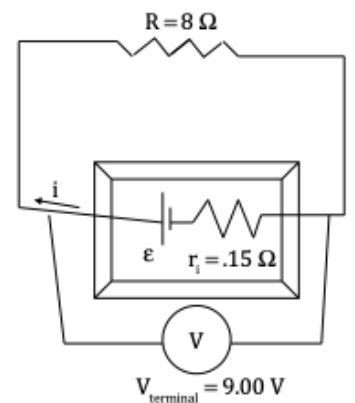


- c.) For Circuit “b”, determine the equivalent resistance of the resistor combination.
- d.) Determine the current in each element.



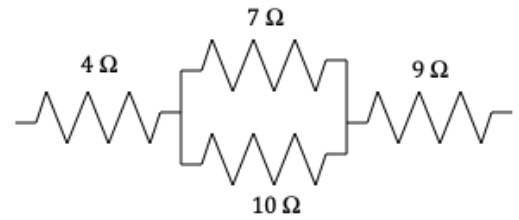
18.4) A voltmeter is placed across a power supply to measure the source's terminal voltage, which is found to be 9.00 V. Give the circuit shown:

- a.) Determine the current in the circuit.
- b.) Determine the EMF for the power supply.



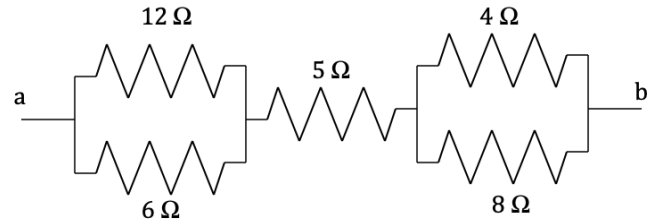
18.5) Consider the combination of resistors shown to the right.

- Determine the equivalent resistance for the combination.
- If a 34.0 V source is placed across the combination, what current will pass through each resistor??



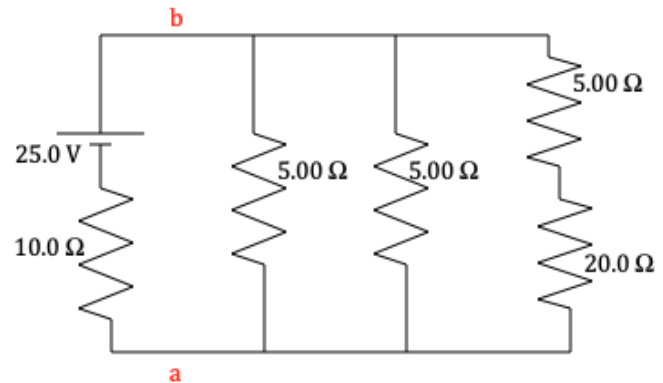
18.6) Consider the circuit to the right:

- Determine the equivalent resistance of the circuit shown to the right.
- With the voltage between points *a* and *b* being 35.0 V, what is the current through each resistor?

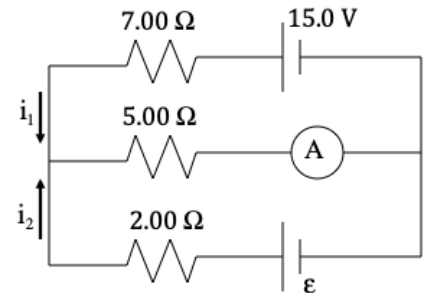


18.9) Consider the circuit to the right.

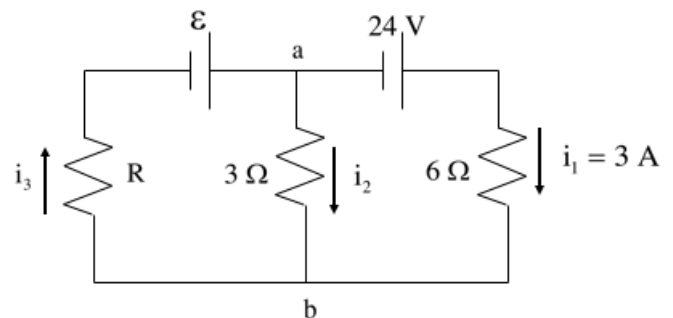
- Determine the electrical potential between points *a* and *b*.
- What is the current through the 20.0 Ω resistor?



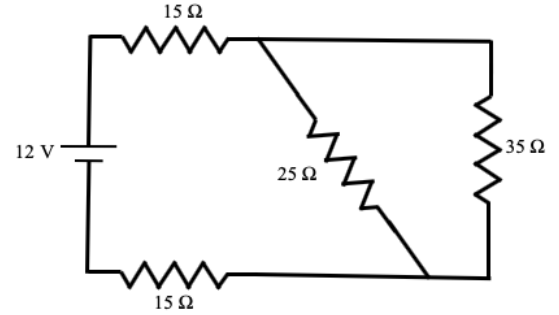
18.17.) The ammeter reads 2.00 A. What are the unknown current values denotes in the circuit?



18.20) For the circuit shown to the right, I_1 is known to be 3.0 A but the values of ϵ and R are unknown. What are the currents I_2 and I_3 ?



18.21) Introductory Kirchoff's Law problem: Use Kirchoff's Laws to determine the currents in each branch (enjoy the numbers—it isn't going to happen on a test!).



18.23) For the circuit to the right:

- How many nodes are there?
- How many branches are there?
- How many independent node equations can you write for the circuit? . . . independent loop equations?
- Derive an expression (then put in the numbers) for each meter reading.

