1.) What voltage is applied to a 4.0 Ω resistor if the current is 1.5 A?

2.) A voltage of 75 V is placed across a 15 Ω resistor. What is the current through the resistor?

3.) A resistor carries a current of 2.5 A when connected to a 50 V battery. What is the resistance of the resistor?

4.) Find the resistance of a 35.0 m length of copper wire that is 2.00 mm in diameter. Copper has a resistivity of 1.72×10^{-8} Ω·m.

5.) A lamp draws 0.50 A from a 120 V generator.

    a.) How much power does the generator deliver?

    b.) How much energy does the lamp convert to heat in 5.0 minutes?

6.) What is the maximum current that should be allowed in a 5.0 W, 220 Ω resistor?

7.) A heating coil has a resistance of 4.0 Ω and operates on 120 V.

    a.) What is the current in the coil while it is operating?

    b.) What energy is supplied to the coil in 5.0 minutes?

8.) A current of 1.2 A flows through a 50 Ω resistor for 5.0 minutes. How much heat is generated by the resistor?

9.) Four 15 Ω resistors are connected in series with a 45 V battery. What is the current in the circuit?

10.) Three resistors of 60.0 Ω, 30.0 Ω, and 20.0 Ω are connected in parallel across a 90.0 V source. Find the current that is drawn from the source.
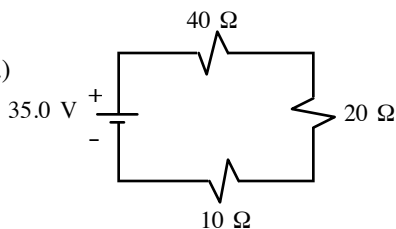
11.)
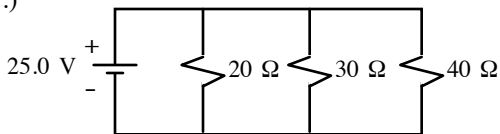
Consider the circuit to the left.

    a.) Find the equivalent resistance of the circuit

    b.) Find the power dissipated in the circuit.

    c.) Find the voltage across and current through each resistor.

12.)

Consider the circuit to the left.

    a.) Find the equivalent resistance of the circuit

    b.) Find the power dissipated in the circuit.

    c.) Find the voltage across and current through each resistor.
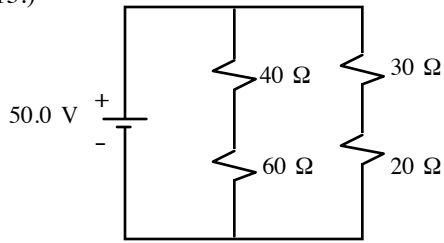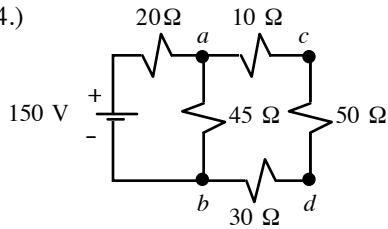
13.)

40 Ω
30 Ω
50.0 V
60 Ω
20 Ω

Consider the circuit to the left.

a.) Find the equivalent resistance of the circuit

b.) Find the voltage across and current through each resistor.

14.)

20Ω
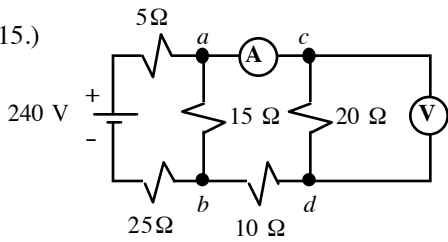10 Ω
a
c
150 V
45 Ω
50 Ω
b
30 Ω
d

Consider the circuit to the left.

a.) Find the equivalent resistance of the circuit.

b.) Find the voltage across and current through each resistor.

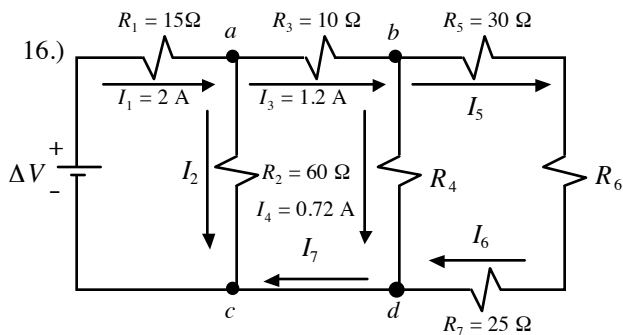c.) Find the potential differences V_{ad}, and V_{bc}.

15.)

5Ω
a
(A)
c
240 V
15 Ω
20 Ω
(V)
b
d
25Ω
10 Ω

Consider the circuit to the left.

a.) Find the equivalent resistance of the circuit.

b.) What are the readings on the ammeter and voltmeter?

16.)

$R_1 = 15\,\Omega$
a
$R_3 = 10\ \Omega$
b
$R_5 = 30\ \Omega$
$I_1 = 2\ A$
$I_3 = 1.2\ A$
I_5
ΔV
I_2
$R_2 = 60\ \Omega$
R_4
R_6
$I_4 = 0.72\ A$
I_7
I_6
c
d
$R_7 = 25\ \Omega$

Consider the circuit to the left.

a.) Find the currents I_2, I_5, I_6, and I_7.

b.) Find the voltage ΔV and the resistances R_4 and R_6.