**Circuits Practice, Just 3 Simple Rules! (with Power)**

3.0V

1. Consider the circuit shown to the right.

R1 4.0Ω 6.0Ω

a. Find the current in the 6.0Ω resistor.

b. Find the potential difference across the 4.0Ω resistor.

c. Find the potential difference across R1.

d. Find the value of R1.

e. Find the power of R1.

9.0V

4.0V

2. Consider the circuit shown to the right.

a. Find the value of R1.R1 20.0Ω 16.0Ω

b. Find the power of R1.

12.0V

3.

12Ω a. Find the potential difference across each resistor.

 b. Find the current in each resistor.

 16Ω

 c. Find the power of each resistor.

 6.0Ω d. Find the current leaving the battery.

 e. Find the power of the battery.

 12V

 f. Find the total resistance of the circuit.

4.

R1 a. Find the potential difference across each resistor.

 b. Find the current in each resistor.

 8.0Ω

 c. Find R1

 4.0Ω d. Find RT

 8.0V 3.5A

5. The potential difference across the 5.0Ω resistor is 10.0V

 5.0Ω 1.0Ω

 12Ω

 8.0Ω

a. What is the current in the 5.0Ω resistor?

b. What is the current in the 1.0Ω resistor?

c. What is the potential difference across the 1.0Ω resistor?

d. What is the potential difference across the 12Ω resistor?

e. What is the current in the 12Ω resistor?

f. What is the current leaving the battery?

g. What is the potential difference across the 8.0Ω resistor?

h. What is the potential difference of the battery?

h. What is the power dissipated by the 5.0Ω resistor?

6. The battery produces 3.6V of potential difference and the current in the 500.0Ω resistor is 6.0mA.

 100.0Ω 200.0Ω

 F E

 0V 3.6V

 G 150.0Ω H

 D C

 A B

 500.0Ω

a. What is the potential at point A?

b. What is the potential at point D?

c. What is the potential at point B?

d. What is the potential at point C?

e. What potential difference between points F and E?

f. What is the current at point F?

g. What is the current at point E?

h. What is the resistance between points E and F?

i. What is the current at point H?

j. What is the current at point G?

k. What is the potential difference between points G and H?

l. What is the resistance between points G and H?

6. Use the circuit to the right to answer the following questions. A

a. With both switches open which bulbs are lit?

b. When switch 1 is closed, and switch 2 is left open,

describe what happens to the brightness of each bulb.

c. When switch 2 is closed, and switch 1 is left open, 1 B 2

describe what happens to the brightness of each bulb relative

to part a.

d. With both switches closed describe the brightness of each

bulb relative to part a. C