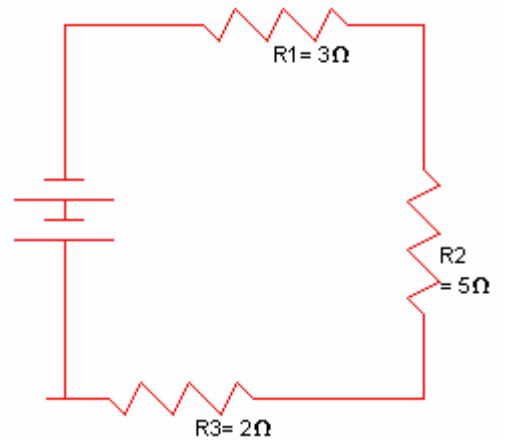


## Electricity Lab #1: Verifying Kirchoff's Laws

### Series Circuit

1. Open up the **VCircuits** program
2. Go to **Circuits** → **Work Sheets** → **Series** → **Series #1**
3. Look at **circuit #1**.
4. Turn on the meter by going **Meter** → **on**.
5. Measure the voltage across the battery.  $V = \underline{\hspace{2cm}}$
6. Measure and record the voltages across each resistor and the voltage across the battery.
7. Record the current at each corner of the circuit.

$V_1$	$V_2$	$V_3$



Top Left	Top Right	Bottom Right	Bottom Left

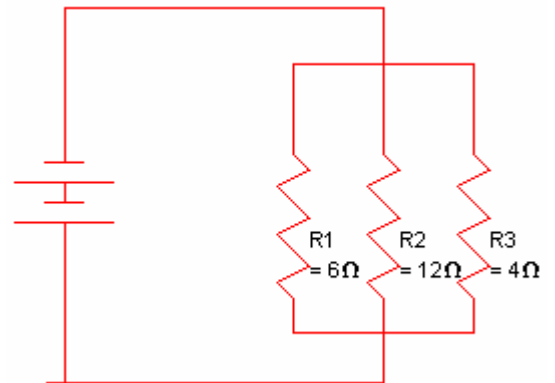
### Conclusion:

What conclusions can we make on current and voltage in a circuit?

### Parallel Circuit

1. Open up the **VCircuits** program
2. Go to **Circuits** → **Work Sheets** → **Parallel** → **Parallel #1**
3. Look at **circuit #1**.
4. Turn on the meter by going **Meter** → **on**.
5. Measure the voltage across the battery.  $V = \underline{\hspace{2cm}}$
6. Measure and record the voltages across each resistor and the voltage across the battery.
7. Record the current at the following parts of the circuit.

$V_1$	$V_2$	$V_3$



Top Right	Before $R_1$	Before $R_2$	Before $R_3$

### Conclusion:

1. What conclusions can we make on current and voltage in a circuit?
2. Why didn't we measure the current after the resistors?
3. Why didn't we measure the currents on each corner?

## Electricity Lab #2: Verifying Kirchoff's Laws

### Combo Circuit

For this lab you will be verifying Kirchoff's laws in a more complicated circuit

1. Open up the **VCircuits** program
2. Go to **Circuits**→**Work Sheets**→**Parallel**→**Parallel #1**
3. Look at **circuit #4**.
4. Turn on the meter by going **Meter**→**on**.
5. Set up a chart to record a series of measurements that will be used to verify Kirchoff's laws.

### Analysis

- 1) In the diagrams, trace out the three possible paths that the electrons will take. Start from leaving the battery to when it gets back to the other terminal. What is the total voltage lost across the resistors in each path?
- 2) Does the circuit follow Kirchoff's laws involving currents? Explain why or why not?

