

Source: [KBhPHYS201CircuitCalculations](#)

## 1 | Kirchoff's Laws

Here's a circuit:

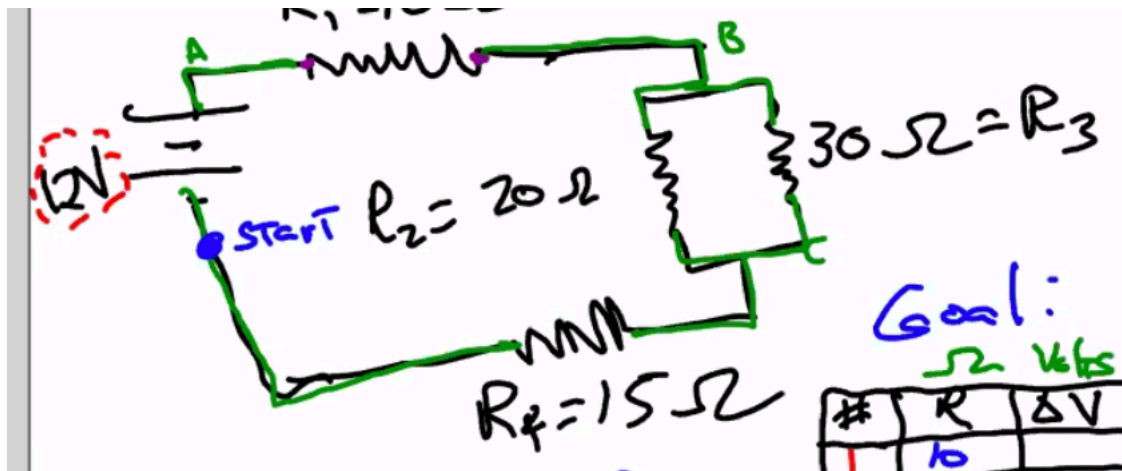


Figure 1: Screen Shot 2020-09-14 at 10.38.44 AM.png

### Kirchoff's First Law

Definition 1 · **Kirchoff's First Law** \*\*Sum of voltage in any closed loop should add up to 0\*\*

As in, the sum of all voltage changes from Start => Start will add up to 0.

### Kirchoff's Second law

**Net current flowing into a node is 0**

With a current  $i_0$ , when it flows into a junction like B, the current  $i_0$  splits into  $i_2$  and  $i_3$

So, to calculate the resistance and current at every point o

START at start

- +12
- $-I_1 * 10$  (per  $I = \frac{\Delta V}{\text{resistance}}$ )
- $-I_2 * 20$
- $-I_1 * 15$
- = 0

$I_1 - I_2 - I_3 = 0$ , per Kirchoff's Second Law.