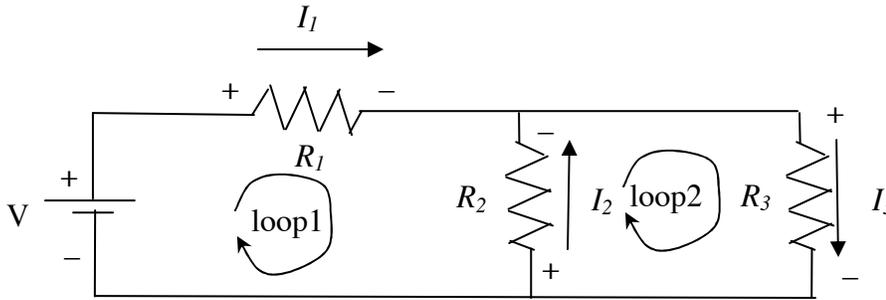


## Application of Kirchoff's Voltage Law



### Rules or Conventions

(note that some rules are arbitrary, but stick to them religiously)

1. Label all voltage sources with plus and minus
2. Label all current direction with an arrow
3. Place a minus sign at each arrow-end of the current arrows
4. Place a plus sign at the other ends of the current arrows
5. Identify and label all loops of interest
6. Choose a direction to go around for the voltage loops and label with arrows
7. When going around the loop, - to + is positive and + to - is negative
8. Sum all positive and negative terms and set it equal to zero

$$\text{Loop 1: } V - I_1 \cdot R_1 + I_2 \cdot R_2 = 0$$

$$\text{Loop 2: } -I_2 \cdot R_2 - I_3 \cdot R_3 = 0$$