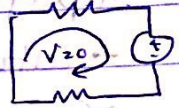


Exp 3: Simple Resistive Circuits

- **Kirchhoff's voltage law** :-

Voltage sum around one loop is zero

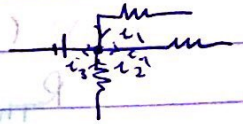
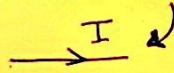


- **Kirchhoff's Current law** :-

Sum of currents about a Node equals zero

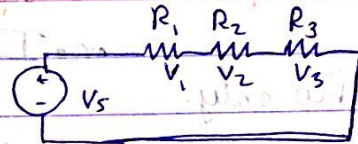
$$i_1 + i_2 = i_3 + i_4$$

Voltage of a short circuit = 0



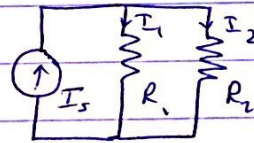
- **Voltage Divider rule** :-

$$V_1 = V_s \frac{R_1}{R_1 + R_2 + R_3}$$



- **Current Divider rule** :-

$$I_1 = I_s \frac{R_2}{R_1 + R_2}$$



- **Potentiometer**

$$\begin{aligned} V_s &= V_{AC} \\ &= V_{AB} + V_{BC} \\ &= I R_{AB} + I R_{BC} \end{aligned}$$

