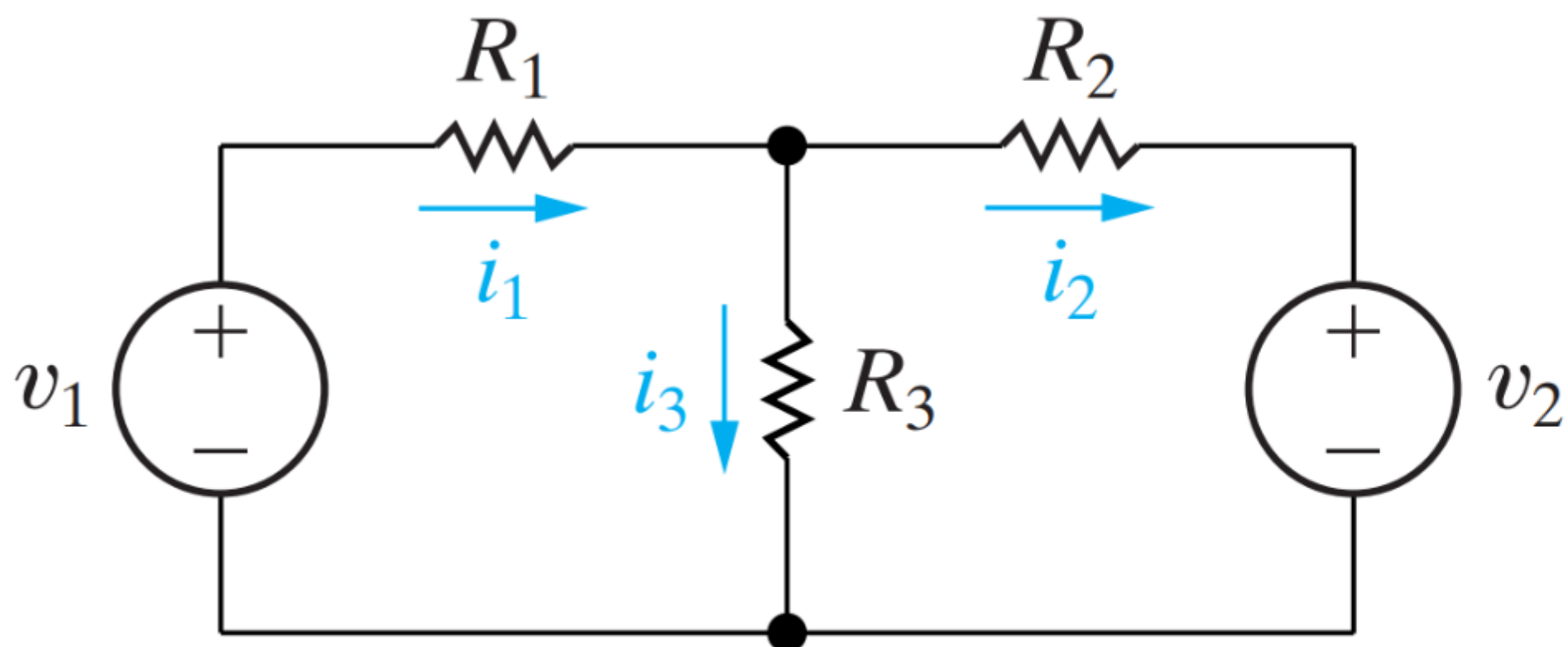


Kirchhoff's Laws

Giannacco

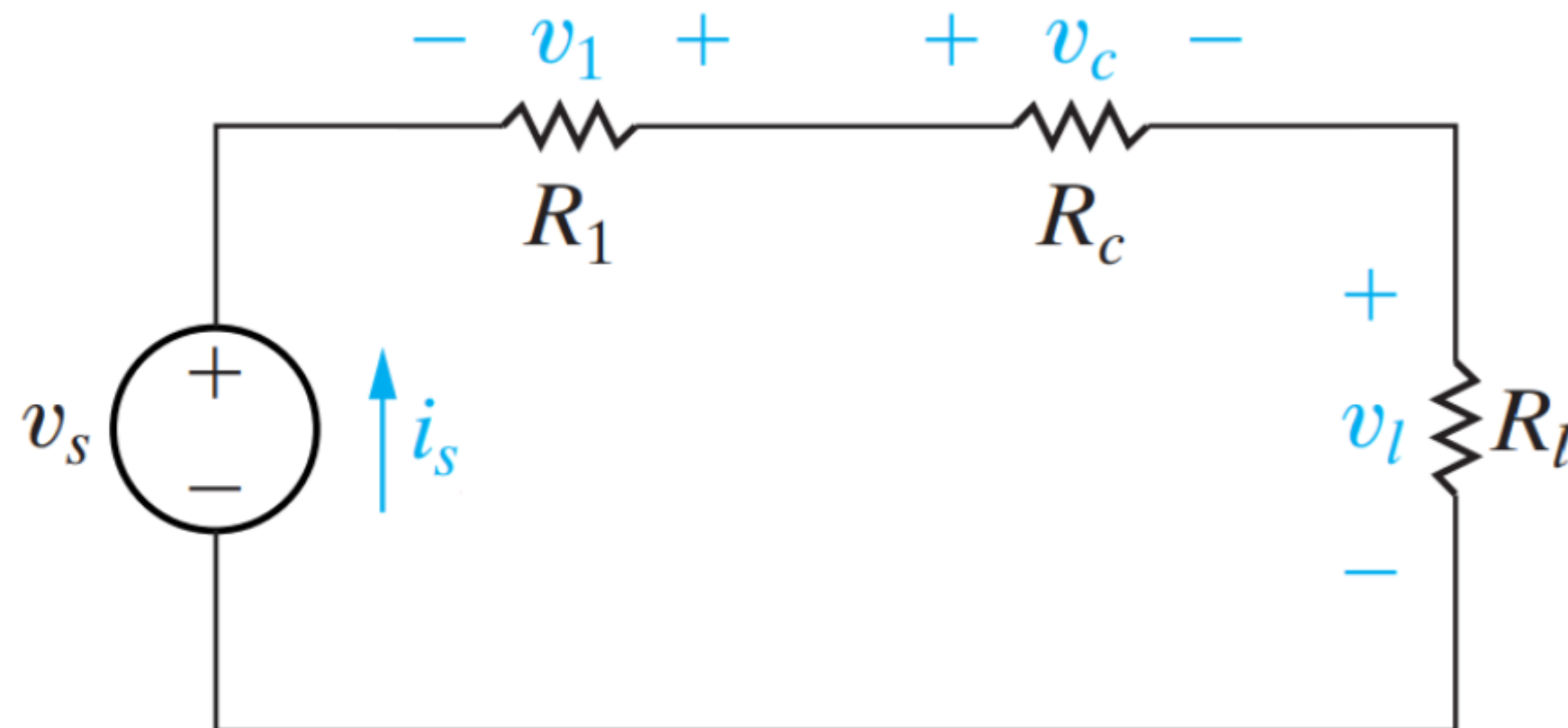
Kirchhoff's Current Law (KCL)



The algebraic sum of all the currents at any node in a circuit equals zero.

$$i_1 - i_2 - i_3 = 0 \quad \text{or} \quad i_1 = i_2 + i_3$$

Kirchhoff's Voltage Law (KVL)



The algebraic sum of all the voltages around any closed path in a circuit equals zero.

$$-v_1 + v_c + v_l - v_s = 0$$