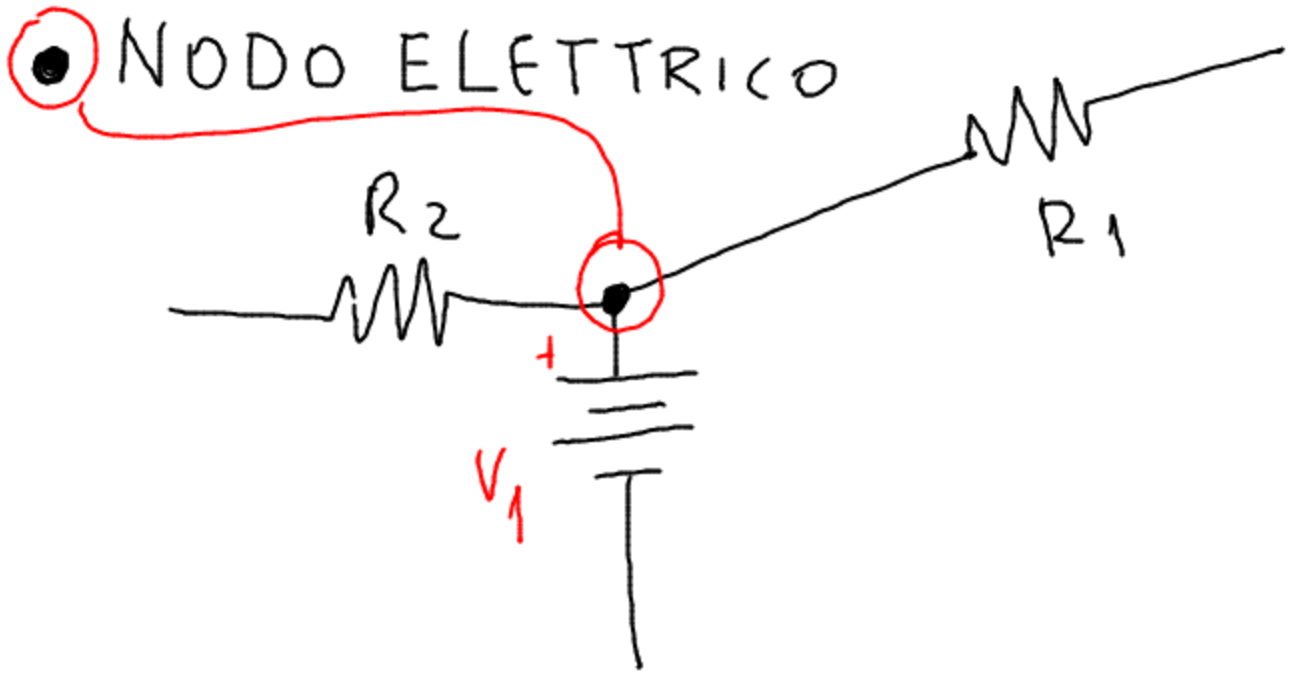


TEORIA DELLE RETI ELETTRICHE

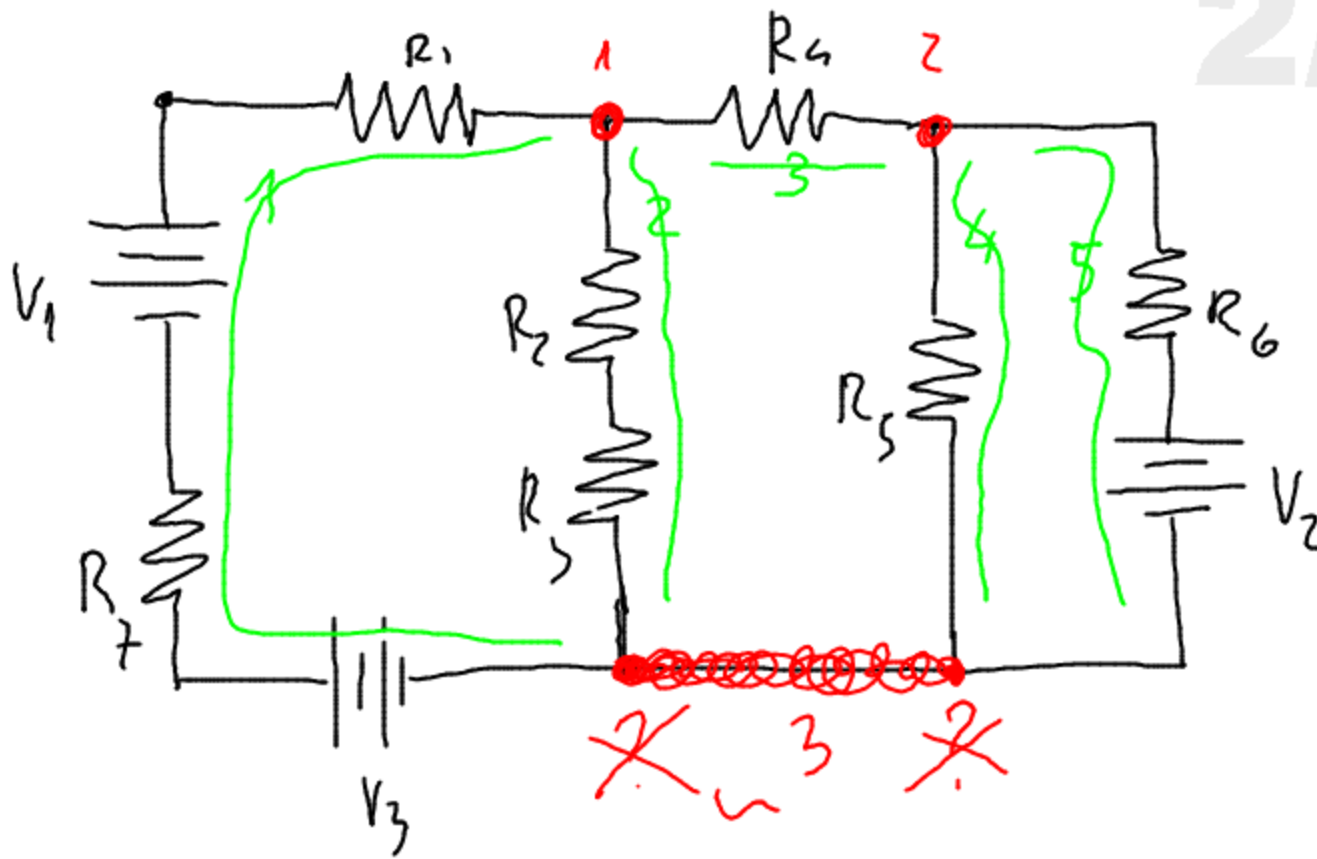
TERMINOLOGIA

1/14



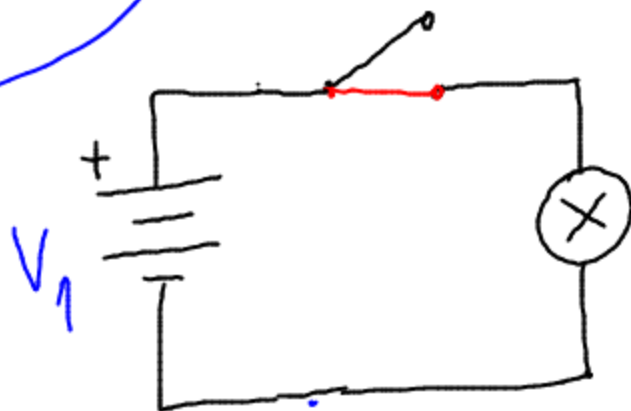
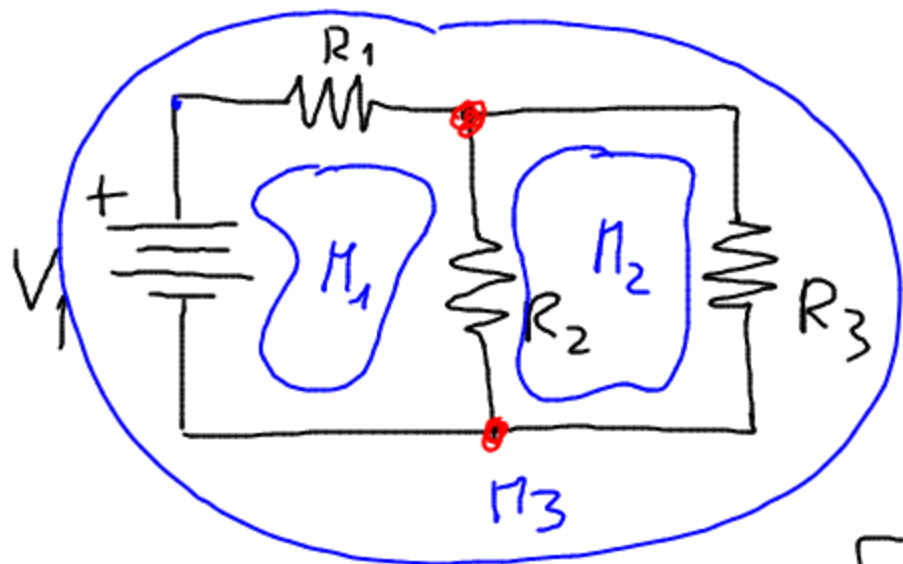
RAMO EL.

2/14



MAGLIA ELETTRICA

3/14



2 PRINCIPI DI KIRCHHOFF

1° (NODI) P.d.K.

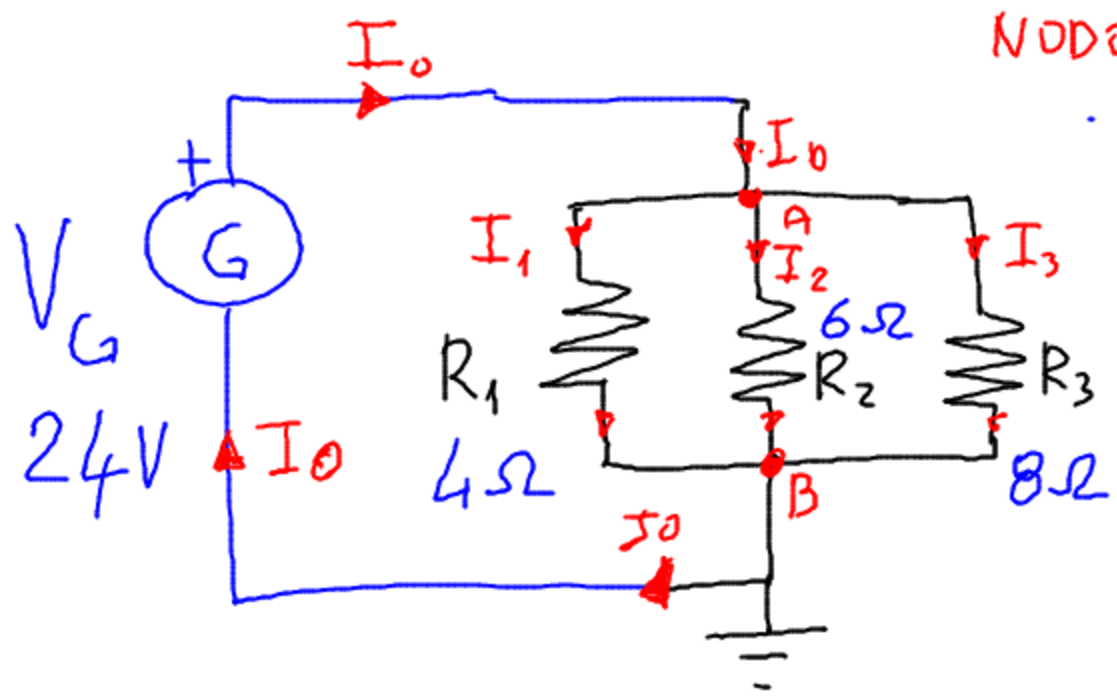
$$\sum I_{in} = \sum I_{out}$$

2° (MAGLIE) P.d.K.

$$\sum V_{GEN} = \sum V_{RES}$$

$$\sum f.e.m. = \sum C.d.t$$

E Sempio sul 1° P.d.K



NODDA $I_0 = I_1 + I_2 + I_3$

$$I_1 = \frac{V_G}{R_1} = \frac{24V}{4\Omega} = 6A$$

$$I_2 = \frac{V_G}{R_2} = \frac{24V}{6\Omega} = 4A$$

$$I_3 = \frac{V_G}{R_3} = \frac{24}{8} = 3A$$

$$I_0 = I_1 + I_2 + I_3 = 13A$$

2º Pdk

Exemplo

5Ω

R₁

I



V₁

I



R₂
6Ω

V₂



R₃

1Ω

I



V_G
18V

I = ?

* $V_G = V_1 + V_2 + V_3 = R_1 I + R_2 I + R_3 I$

$V_1 = R_1 I$ $V_G = I(R_1 + R_2 + R_3)$

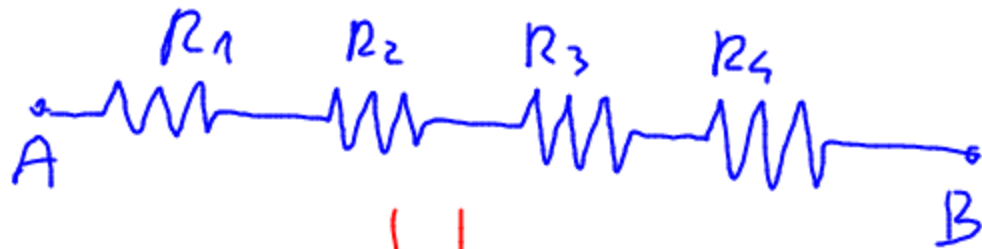
$V_2 = R_2 I$

$V_3 = R_3 I$

$I = \frac{V_G}{(R_1 + R_2 + R_3)}$

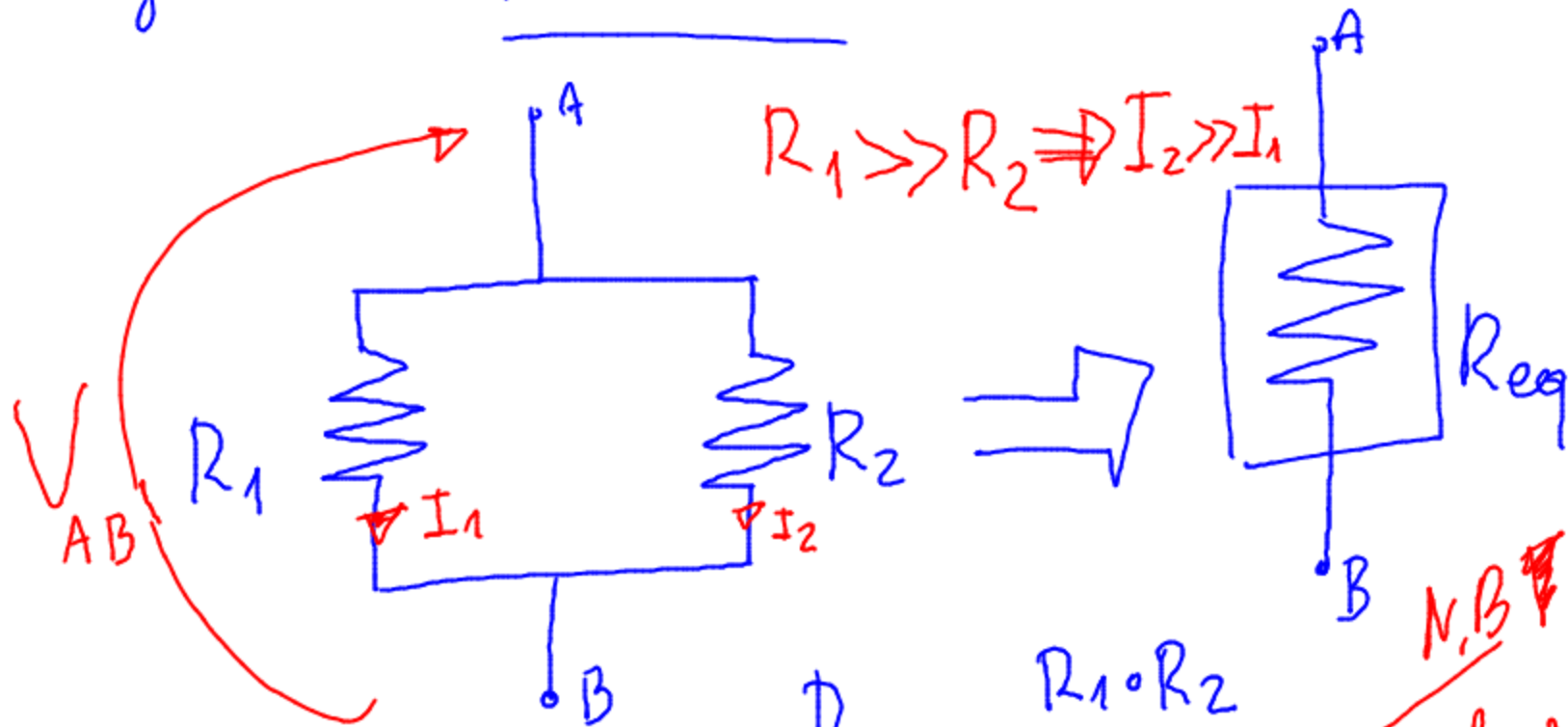
$I = \frac{18[V]}{12[\Omega]} = 1,5A$

Collegamento SERIE



$$R_{eq} = R_1 + R_2 + R_3 + R_4$$

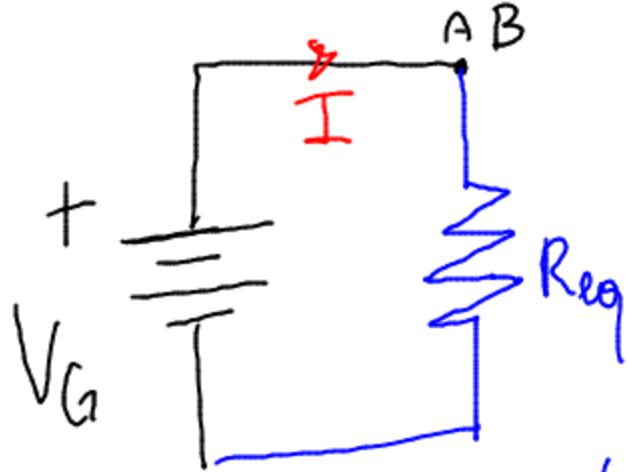
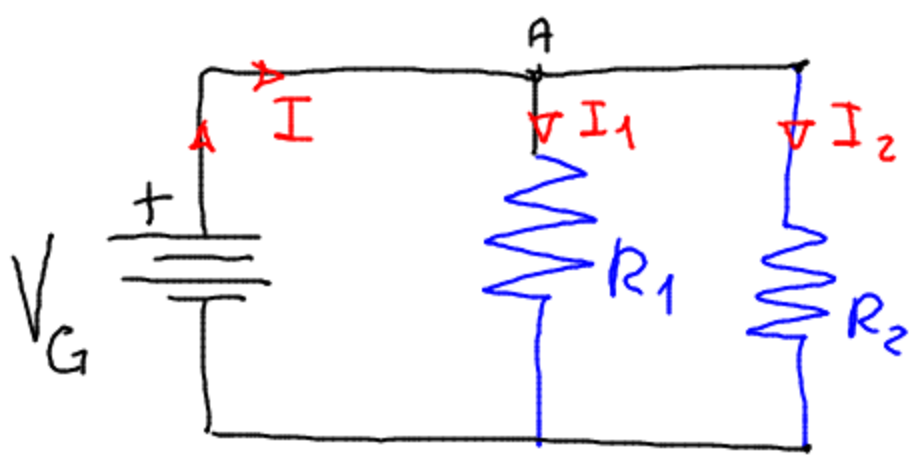
Collegamento PARALLELO



$$R_1 \gg R_2 \Rightarrow I_2 \gg I_1$$

$$R_{eq} = \frac{R_1 \cdot R_2}{(R_1 + R_2)}$$

~~N.B. AT THE ALL CALC.~~



$$R_{eq} = \frac{V_G}{I} =$$

$$I = I_1 + I_2 \quad \left(\begin{array}{l} 1^\circ \text{ P.d.K} \\ \text{NODOA} \end{array} \right)$$

$$I_1 = \frac{V_G}{R_1} \quad \left(\text{legge di OHM} \right)$$

$$I_2 = \frac{V_G}{R_2}; \quad I = \frac{V_G}{R_1} + \frac{V_G}{R_2}$$

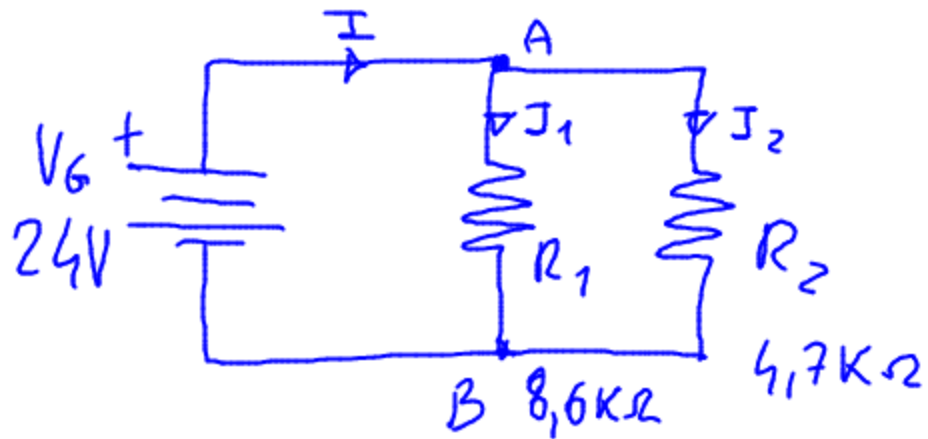
$$I = V_G \left(\frac{1}{R_1} + \frac{1}{R_2} \right)$$

$$\frac{V_G}{I} = \frac{1}{\left(\frac{1}{R_1} + \frac{1}{R_2} \right)}$$

$$R_{eq} = \frac{1}{\left(\frac{1}{R_1} + \frac{1}{R_2}\right)} = \frac{1}{\frac{R_2 + R_1}{R_1 \cdot R_2}}$$

$$R_{eq} = \frac{R_2 \cdot R_1}{R_1 + R_2}$$

$$\frac{1}{A} + \frac{1}{B} = \frac{A+B}{AB}$$



$$I_1 = ?$$

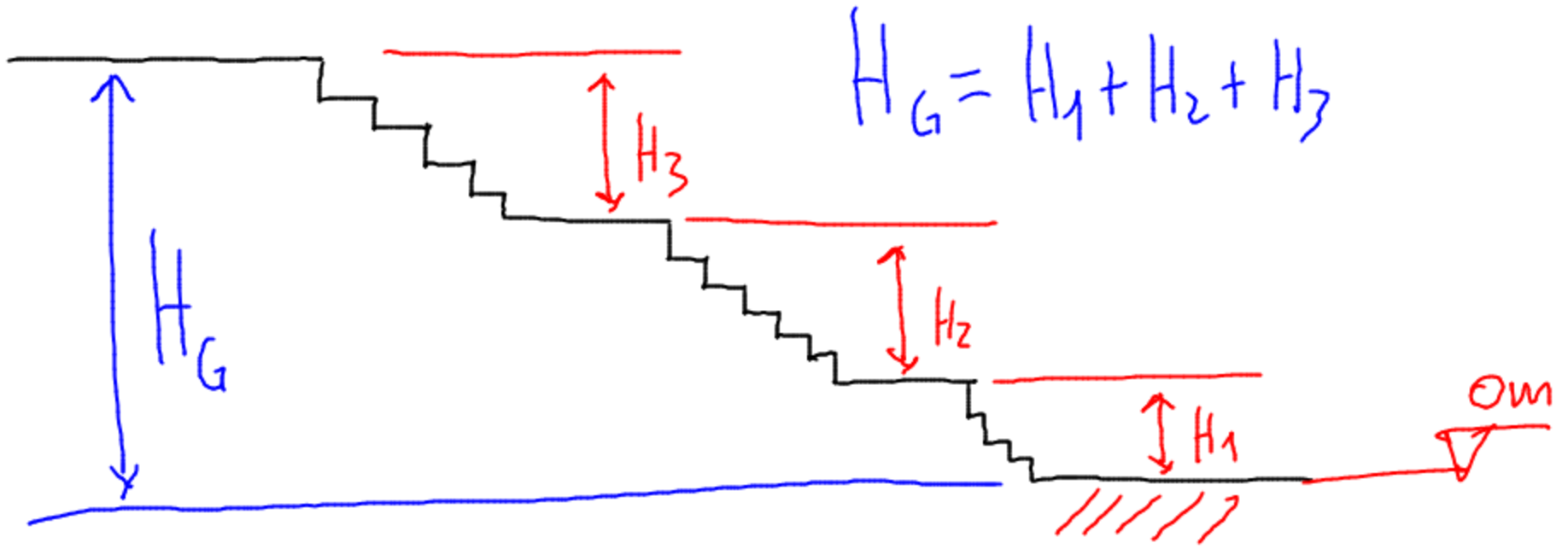
$$I_2 = ?$$

$$I = ?$$

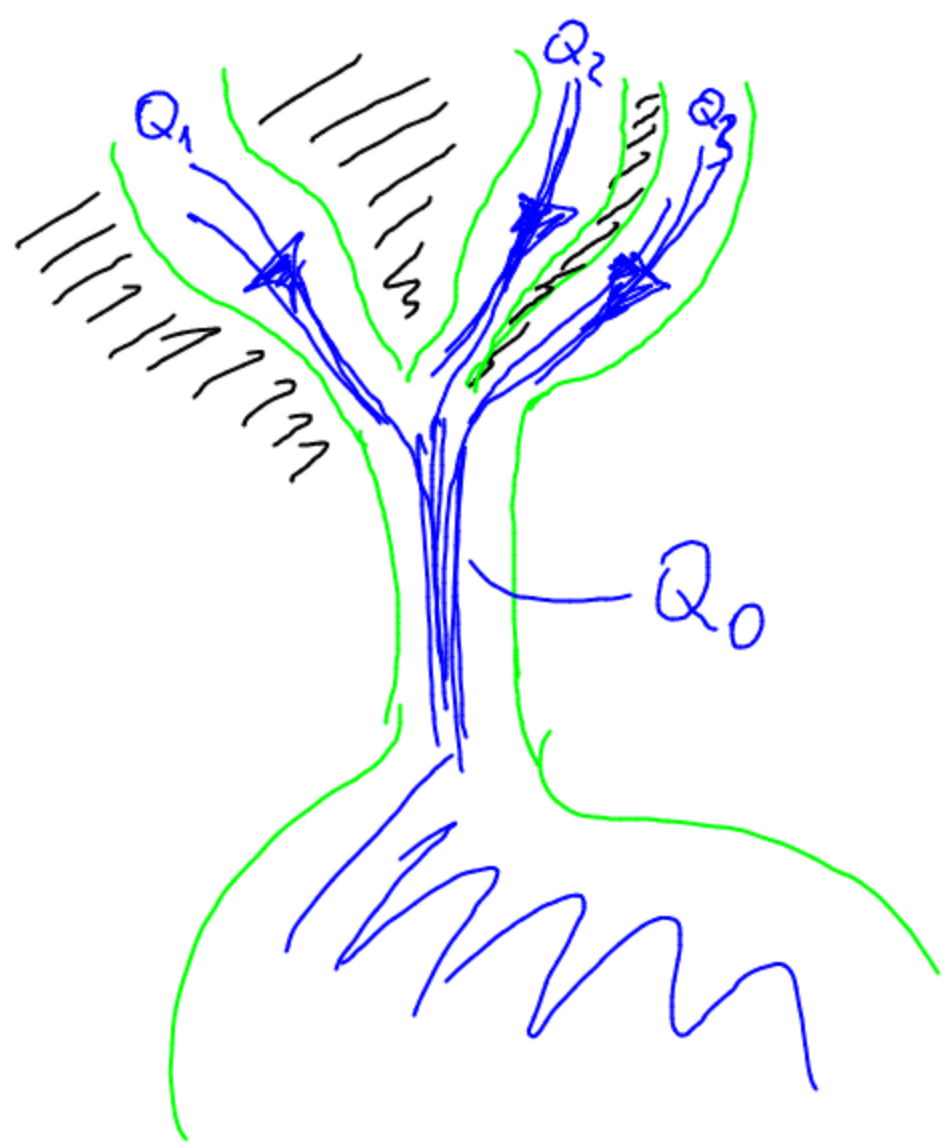
$$R_{eq} = ? \quad 3,03k\Omega$$

NB!

$$[mA] = \frac{[V]}{[k\Omega]}$$



$$H_G = H_1 + H_2 + H_3$$



Conto N°1

BANCA

FADDA-C.

1'000'000€

Conto N°2

McFADDA & C.

2'000'000€

Conto N°3

VONFADDA

3'000'000€