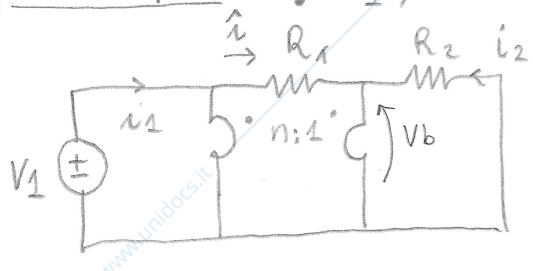


$$V_2 : V_b = n : 1$$

$$V_2 = n V_b \quad i_2 = -\frac{1}{n} i_b$$

$$V_2 = n V_b$$

per semplificare $V_1 \neq 0$ e $V_2 = 0$



$$V_b = \frac{1}{n} V_2 = \frac{1}{n} V_1$$

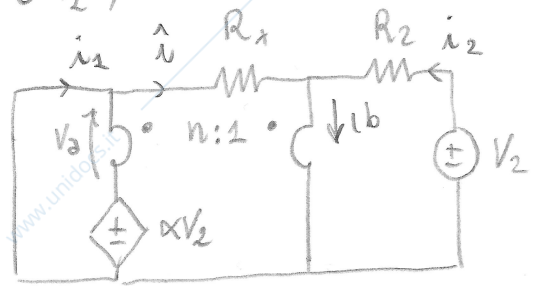
$$i_2 = -\frac{1}{n} \frac{V_1}{R_2} \quad G_{21} = -\frac{1}{n R_2}$$

$$\hat{i} = \left(V_1 - \frac{1}{n} V_1 \right) \cdot \frac{1}{R_1} = \frac{n-1}{n R_1} V_1$$

$$i_1 = \hat{i} + \left(-\frac{1}{n} \left(-\frac{1}{n} \frac{V_1}{R_2} \right) \right) =$$

$$= \frac{n-1}{n R_1} V_1 + \frac{1}{n^2 R_1} V_1 = \boxed{\frac{n(n-1)+1}{n^2 R_1}} V_1 \quad G_{11}$$

$V_1 = 0$ e $V_2 \neq 0$



$$V_2 = -\alpha V_2$$

$$V_b = -\frac{\alpha}{n} V_2$$

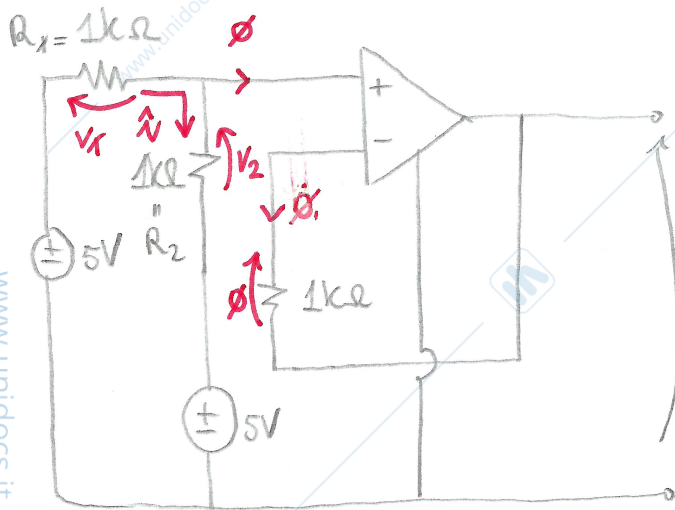
$$i_2 = \left[V_2 - \left(-\frac{\alpha}{n} V_2 \right) \right] \frac{1}{R_2} = \boxed{\frac{n+\alpha}{n R_2}} V_2 \quad G_{22}$$

$$\hat{i} = \left[0 - \left(-\frac{\alpha V_2}{n} \right) \right] \frac{1}{R_1} = \frac{\alpha}{n R_1} V_2$$

$$i_1 = i_3 + \hat{i} = -\frac{1}{n} \left(\hat{i} + i_2 \right) + \hat{i} =$$

$$= \frac{n-1}{n} \frac{\alpha}{n R_1} V_2 - \frac{1}{n} \frac{n+\alpha}{n R_2} V_2$$

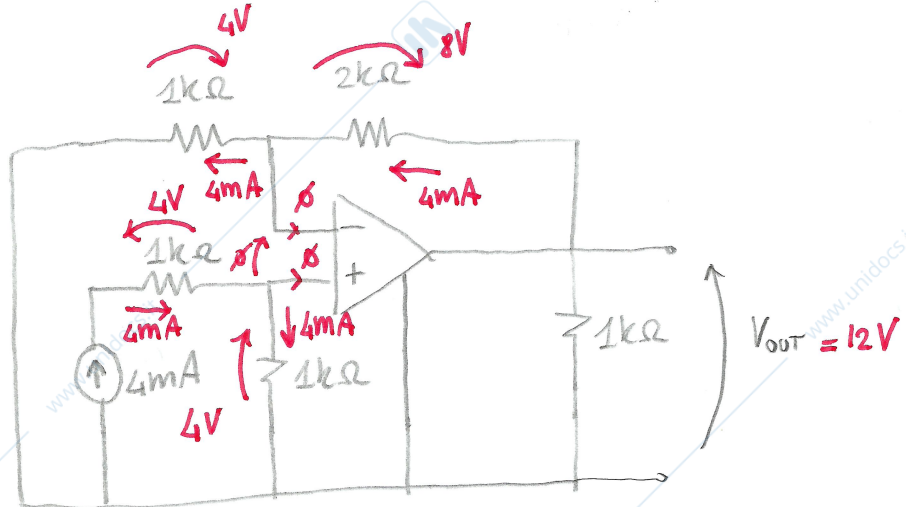
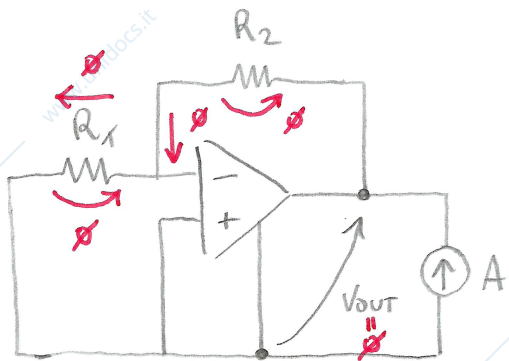
$$= \frac{(n-1)\alpha R_2 - (n+\alpha)R_1}{n^2 R_1 R_2}$$



$$5V - V_1 - V_2 - 5V = 0$$

$$V_1 + V_2 = 0$$

$$\hat{u} = \frac{V_1 + V_2}{R_1 + R_2} = 0$$



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