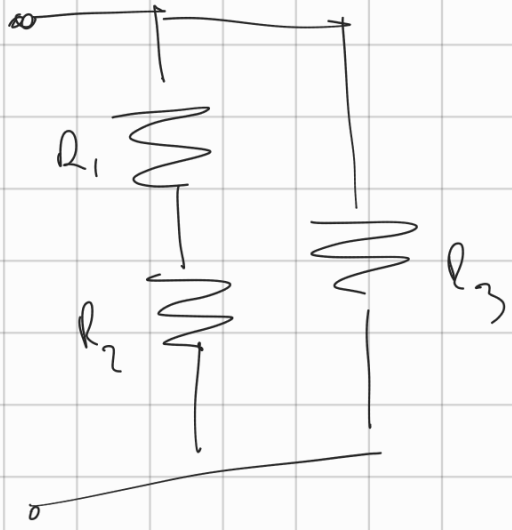


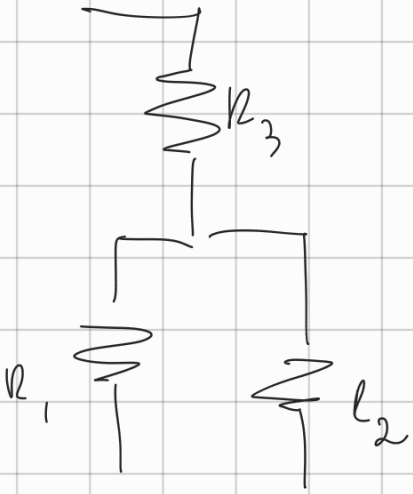
$R_1 = 10\,\Omega$

$R_2 = 30\,\Omega$

$R_3 = 10\,\Omega$

$R_{1-2} = 40\,\Omega$

$$R_{eq} = \frac{1}{40} + \frac{1}{10} = \left(\frac{1+4}{40}\right)^{-1} = \frac{40}{5} = 8\,\Omega$$

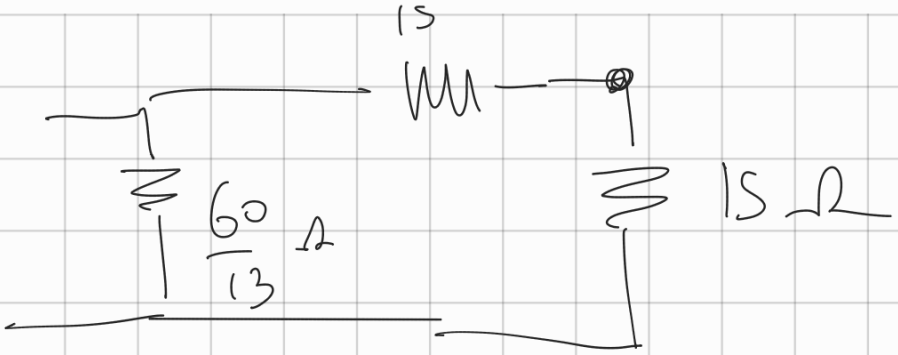


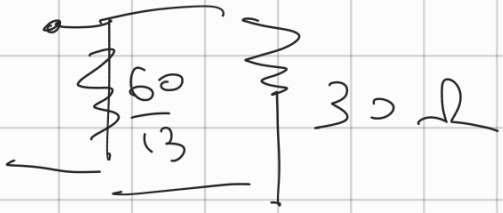
$R_1 = 14\,\Omega$ $R_2 = 35\,\Omega$

$R_3 = 20\,\Omega$

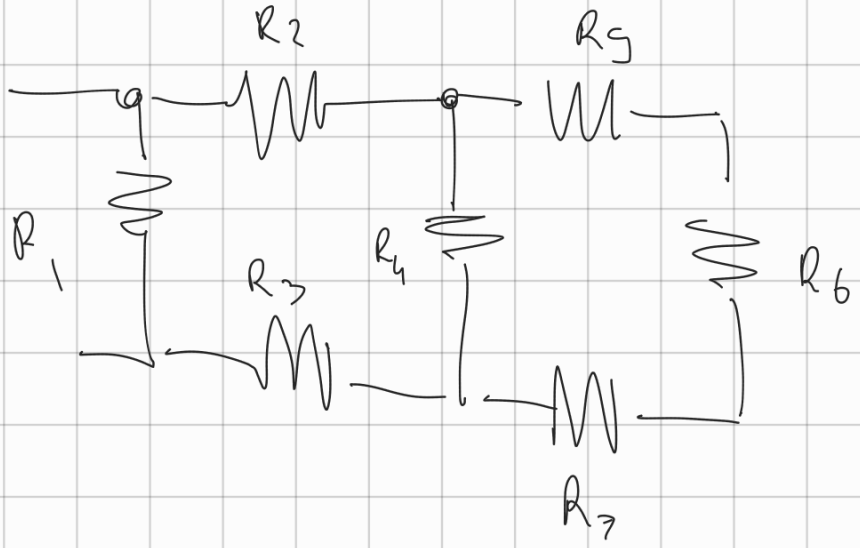
$$R_{1,2} = \frac{1}{\frac{1}{14} + \frac{1}{35}} = 10\,\Omega$$

$R_{eq} = 30\,\Omega$



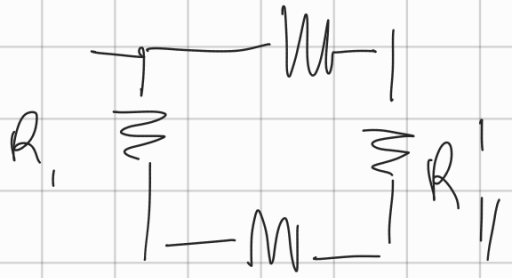


$R_{eq} = 4\ \Omega$



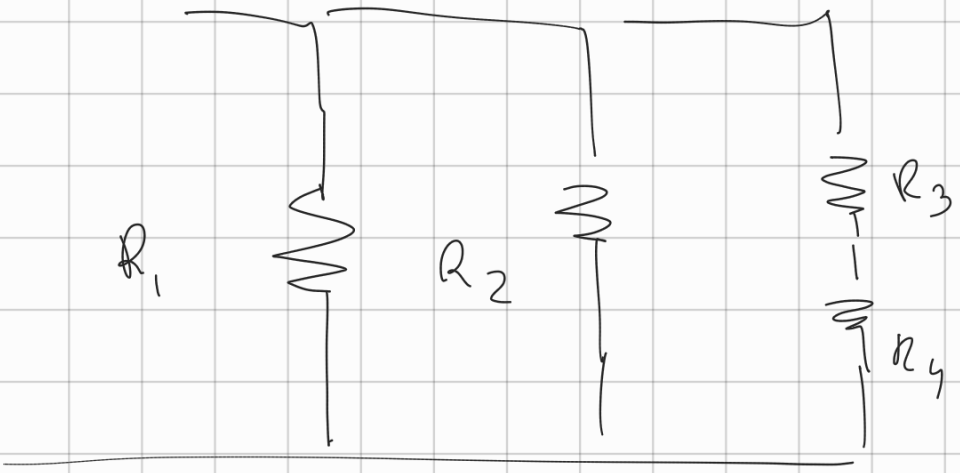
$R_{5-6-7} = 20\ \Omega$

$R_{4||5-6-7} = \frac{1}{\frac{1}{5} + \frac{1}{20}} = 4\ \Omega$



$R_{2-||-R_3} = 12\,\Omega$

$$R_{eq} = \frac{1}{\frac{1}{4} + \frac{1}{12}} = 3\,\Omega$$



$R_1 = 30\,\Omega$

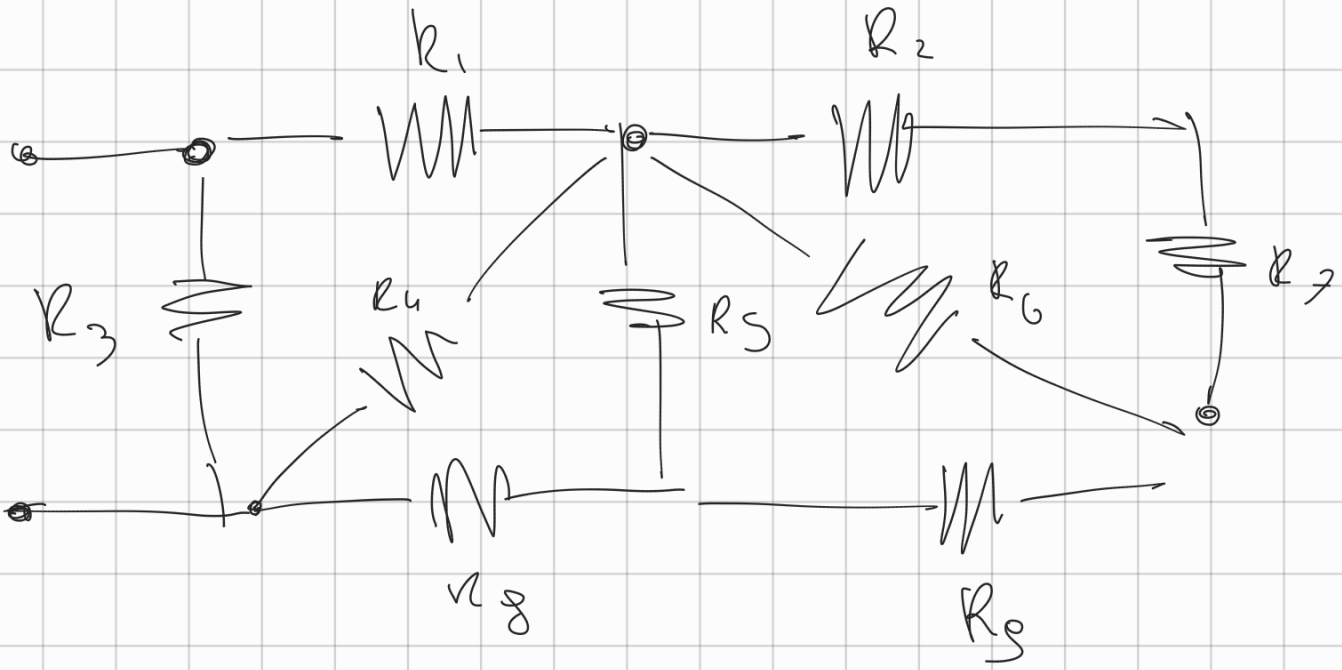
$R_2 = 15\,\Omega$

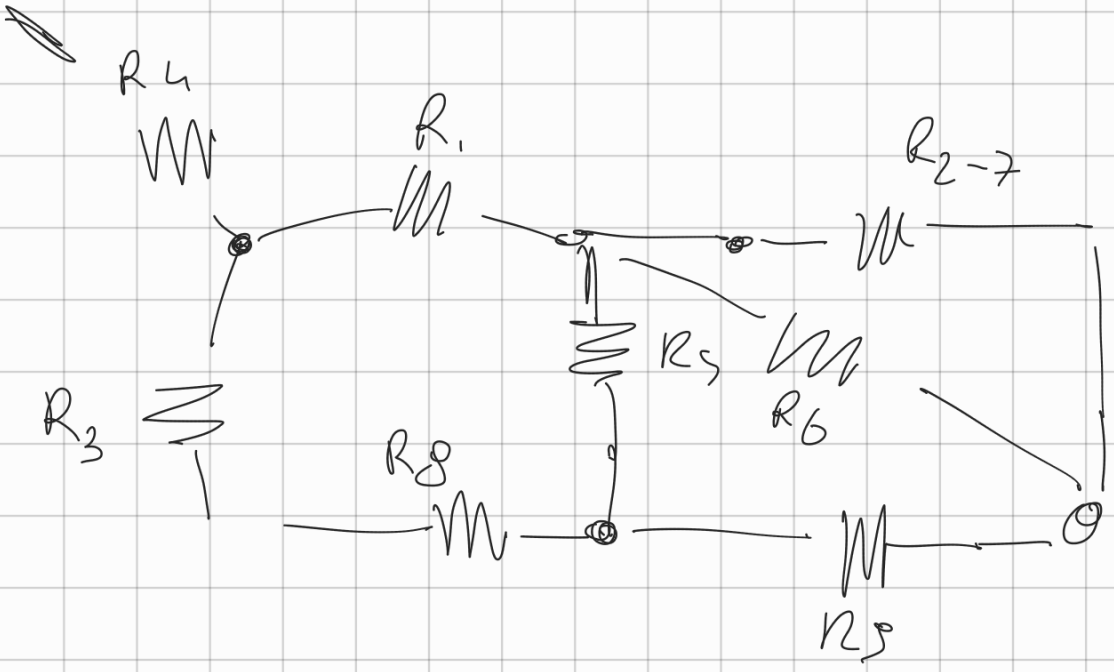
$R_3 = 5\,\Omega$

$R_4 = 10\,\Omega$

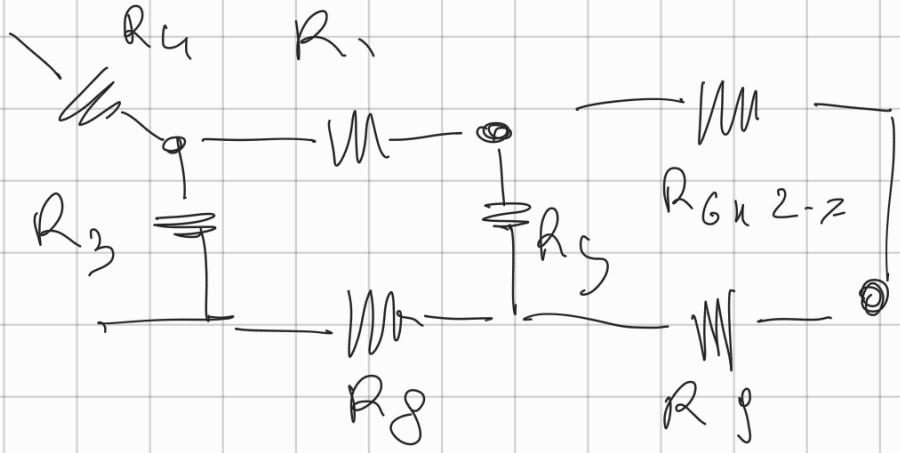
$$R_{eq} = \frac{1}{\frac{1}{30} + \frac{1}{15} + \frac{1}{15}}$$

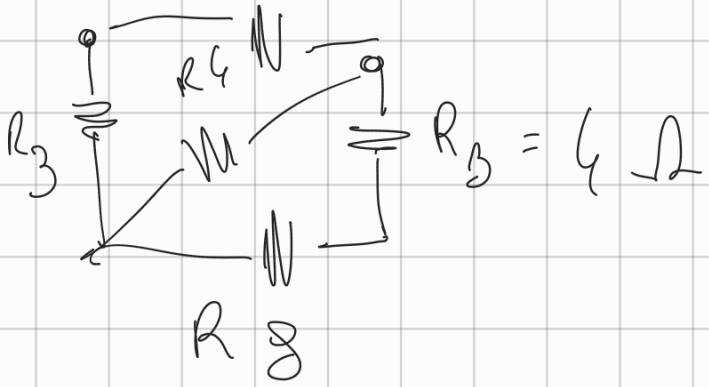
$R_{eq} = 6\,\Omega$ ✓



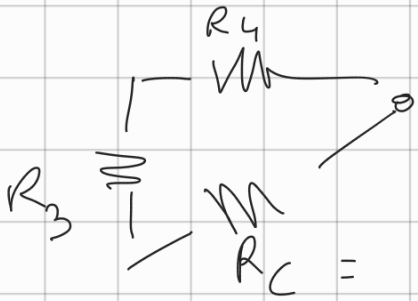


$R_{2-7} = 12\ \Omega$ $\quad R_6 \parallel R_{2-7} = 3\ \Omega$





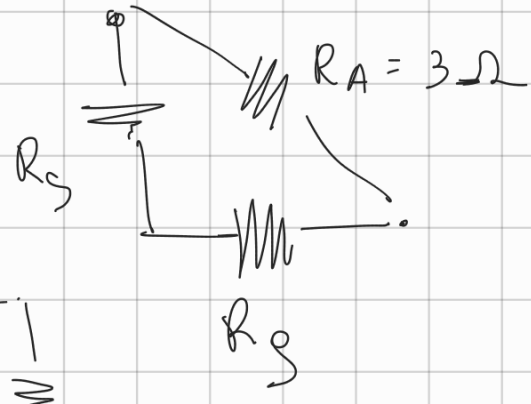
$R_{B-8} = 16\,\Omega$

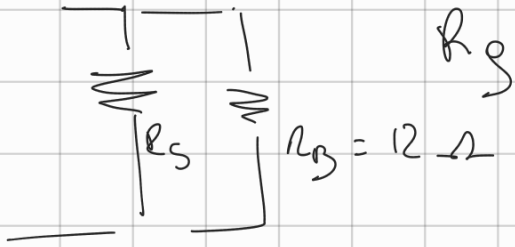


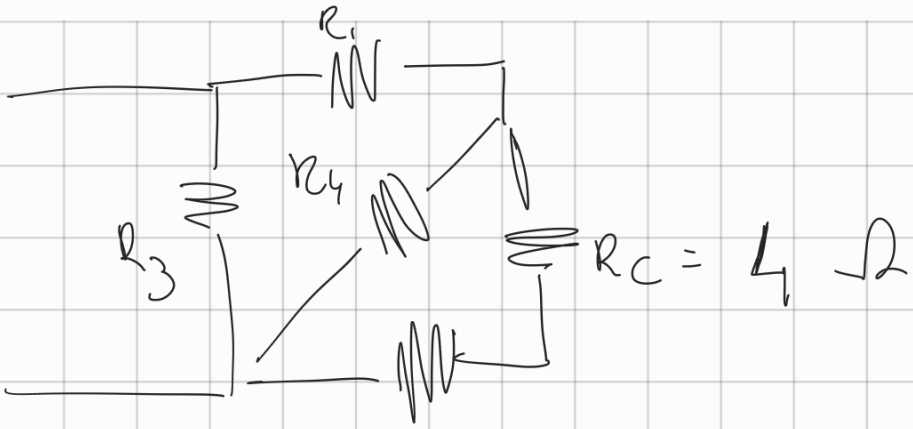
$8 + 4 = 12$

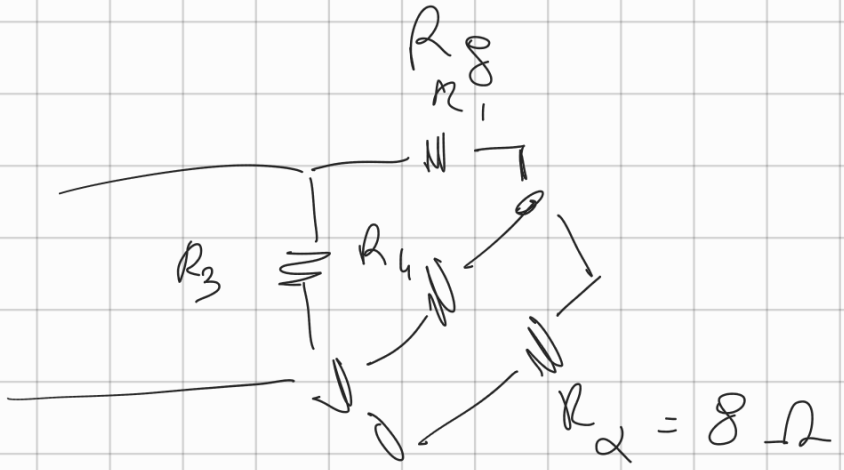
NO

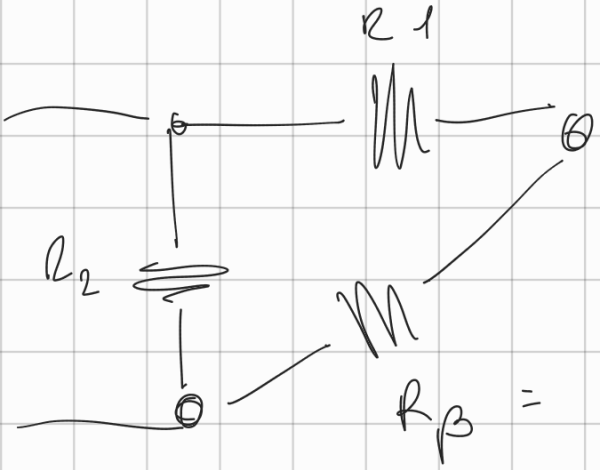
$R_{2-7} = 12\,\Omega$









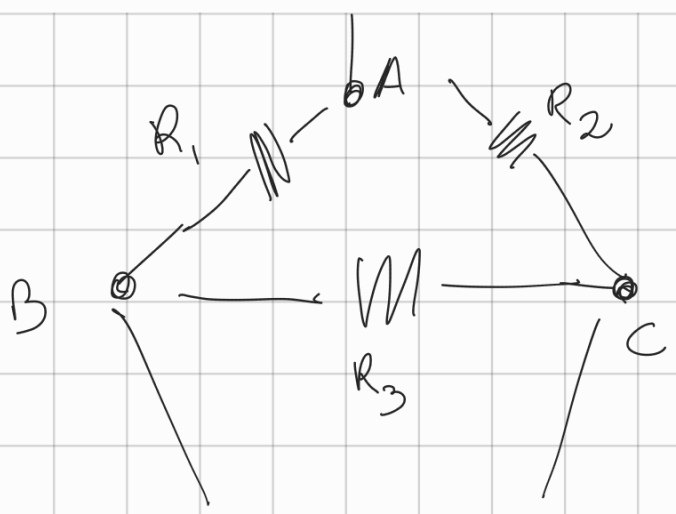


$R_B = 4\,\Omega$

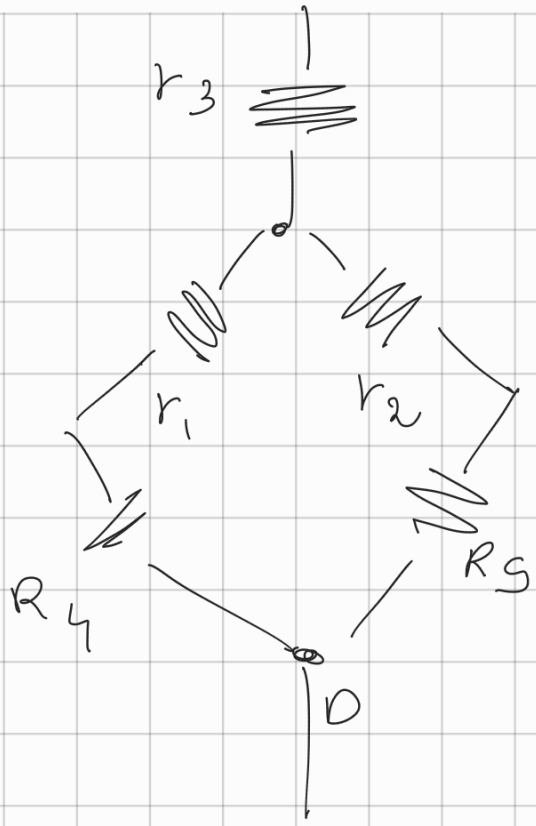
$R_1 = 2\,\Omega$

$R_2 = 4\,\Omega$

$$R_{eq} = \frac{1}{\frac{1}{4} + \frac{1}{6}} \simeq 2{,}4$$



$\Rightarrow$



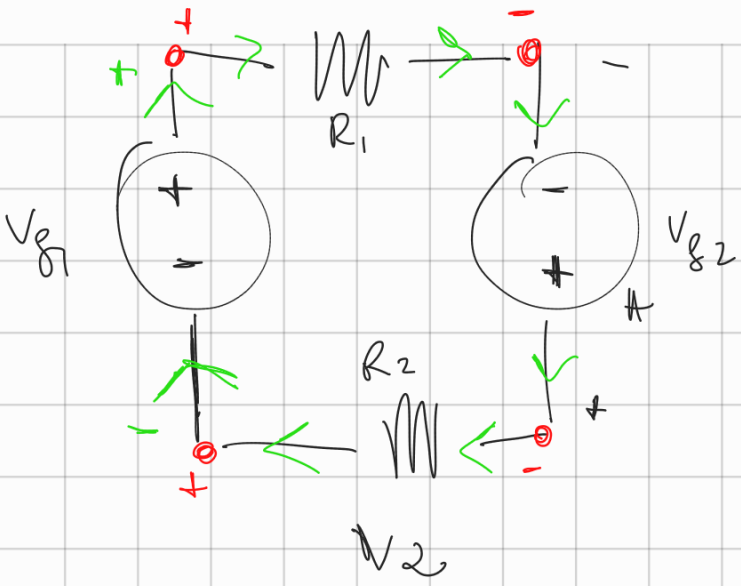
$$r_3 = \frac{R_1 \cdot R_2}{R_1 + R_2 + R_3} = 6\,\Omega$$

$$r_1 = \frac{R_2 \cdot R_3}{36} = 3\,\Omega$$

$$r_2 = \frac{R_1 \cdot R_3}{36} = 2\,\Omega$$

$$r_{1-r_4} = 10\,\Omega \parallel 5\,\Omega = \frac{35}{12}$$

V_1



$R_1 = 2\ \Omega$

$R_2 = 3\ \Omega$

$V_{g1} = 15\ V$

$V_{g2} = 10\ V$

$-V_{g1} + V_1 - V_{g2} - V_2$ i è la stessa

$V_1 = V_{g1} + V_{g2} + V_2$

$i = \frac{V_1}{R_1} = -\frac{V_2}{R_2}$

$\frac{V_1}{R_1} = -\frac{V_2}{R_2} \Rightarrow$ $\boxed{V_2 = -\frac{V_1 R_2}{R_1}}$

$V_1 = V_{g1} + V_{g2} - \frac{V_1 R_2}{R_1}$

$$V_1 + \frac{V_1 R_2}{R_1} = V_{g1} + V_{g2}$$

$$\frac{V_1 R_1 + V_1 R_2}{R_1} = V_{g1} + V_{g2}$$

$$\Rightarrow V_1 (R_1 + R_2) = R_1 (V_{g1} + V_{g2})$$

$$\Rightarrow V_1 = \frac{R_1 (V_{g1} + V_{g2})}{R_1 + R_2}$$

$$\Rightarrow V_1 = \frac{2(25)}{5} = 10\,V$$

$$\Rightarrow V_2 = -15\,V$$

$$P_{G_1} = V_1 \cdot i \qquad i = 5A$$

$$P_{G_1} = 50\,W$$

$$P_{G_2} = V_2 \cdot i = -\#$$

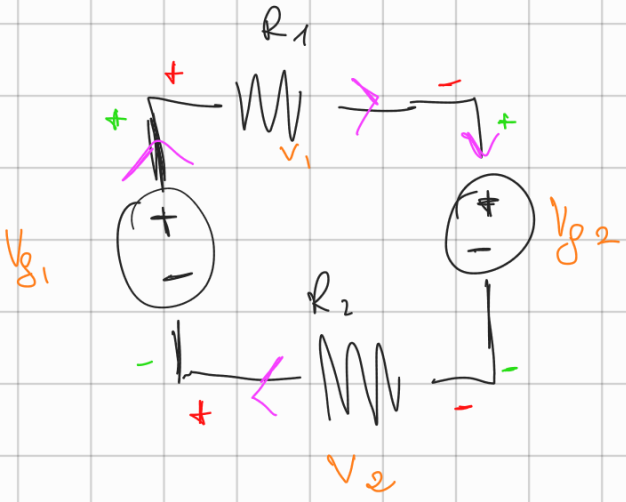
$$i_1 = \frac{V_1}{R_1} = 5A \qquad P_1 = 5A \cdot 10 = 50\,W$$

R_1 onde 50 W

$$i_2 = -\frac{V_2}{R_2} = -\frac{-15}{3} = 5A$$

$$P_2 = R_2 i^2 = 3 \cdot 25 = 75W$$

$$P_{g1} = 15 \cdot 5A = 75W \qquad P_{g2} = 50W$$



$$V_1 = R_1 i$$

$$V_2 = R_2 i$$

kV $-V_{g1} + V_1 + V_{g2} - V_2 = 0$

$$i = \frac{V_1}{R_1} = \frac{V_2}{R_2} \qquad V_1 = \frac{-V_2}{R_2} R_1$$

$$-\frac{V_2}{R_2} R_1 - V_2 = V_{g1} - V_{g2}$$

$$-V_2 R_1 - V_2 R_2 = R_2 (V_{g1} - V_{g2})$$

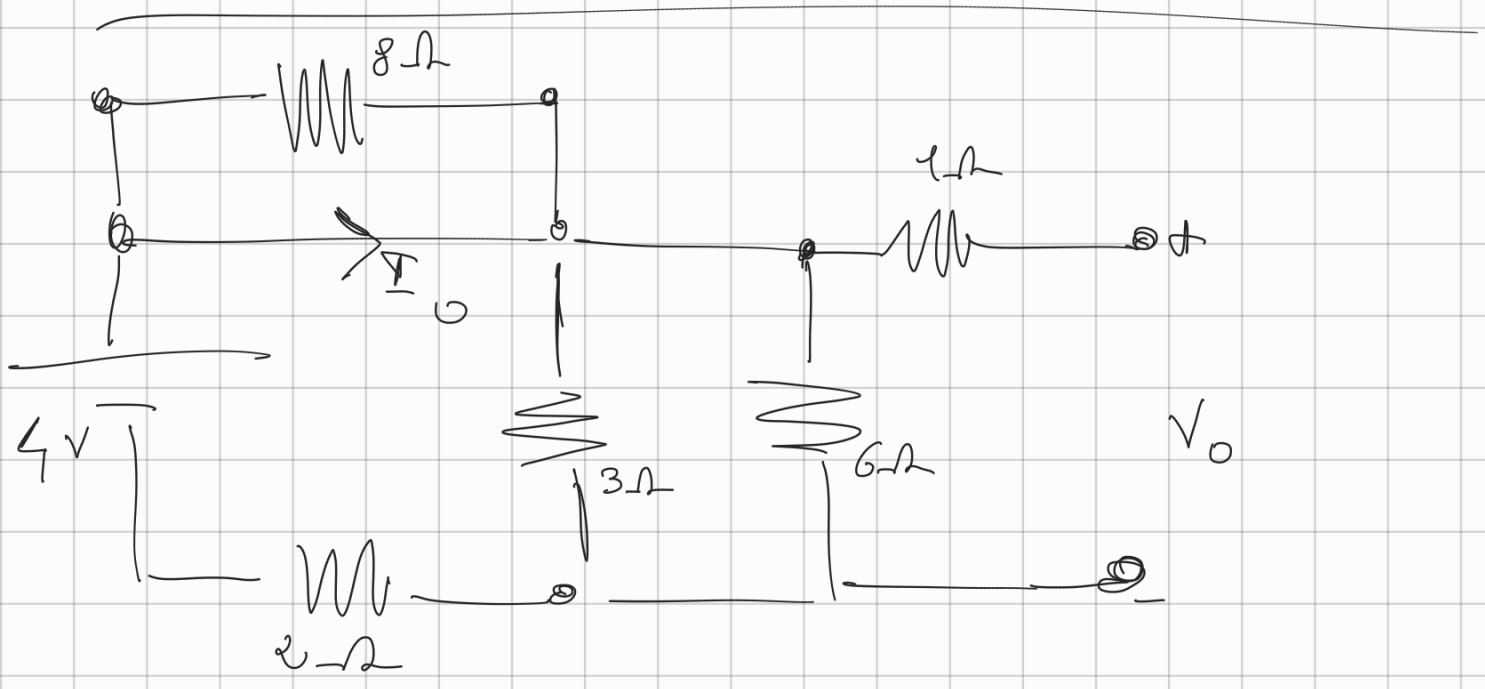
$$V_2 (-R_1 - R_2) = \frac{5 \quad 3}{-5} =$$

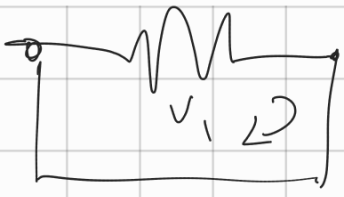
$$\boxed{\begin{aligned} V_2 &= -3\,V \\ V_1 &= 2\,V \end{aligned}}$$

$$P_1 = V_1 \cdot i = 2\,W$$

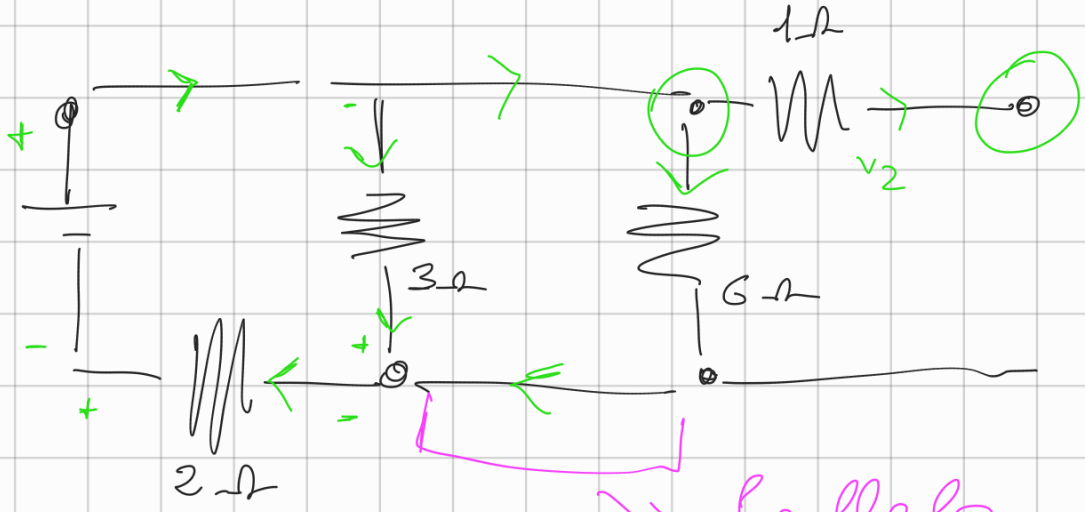
$$P_2 = V_2 \cdot i = 3\,W$$

$$P_{g1} = 15\,W \qquad P_{g2} = 10\,W$$





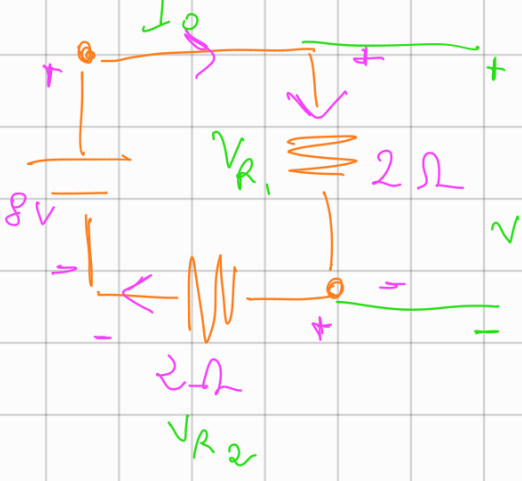
$V_1 = 0\,V \;\Rightarrow\; i_1 = 0A$



$i_2 = 0 \;\Rightarrow\; V_2 = 0$

→ Parallelo

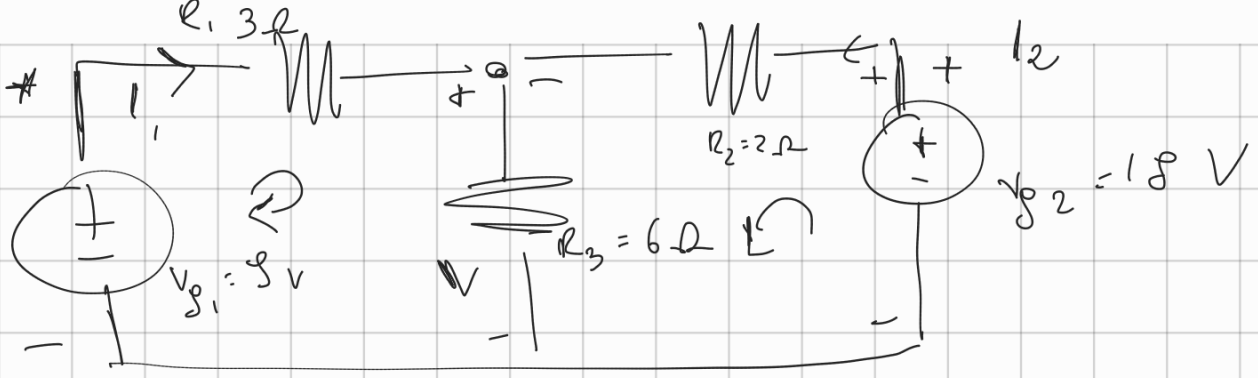
$$\frac{1}{\frac{1}{3}+\frac{1}{6}} = \frac{1}{\frac{2+1}{6}} = 2$$



$V_{R_2} = 2\Omega \cdot I_0$

$4V = 2\Omega I_0 + 2\Omega I_0$

$\frac{4}{4} = I_0 = 1A \qquad V_0 = 2V$



$V = 12\,V$

$v_{g1} = i_1 R_1 + V = 3i_1 + 12 = 9$

$3i_1 = -3 \Rightarrow i_1 = -1\,A$

$-v_{g2} + R_2 i_2 + 12 = 0 \Rightarrow i_2 = \frac{18-12}{2} = 3A$

$p_{g1} = -9\,W$

$p_{g2} = 18 \cdot 3 = 54$