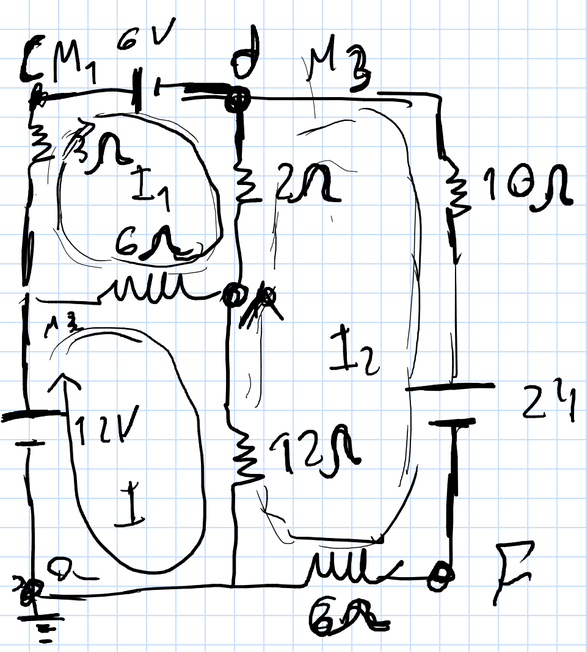

d) $\Delta V_{DA} = |2(I_2 - I_1)| + |12(I_3 - I_2)| = 8{,}54\,V$

$\Delta V_{FC} = 30\,V - 10 I_2 = 20{,}38\,V$

M_1: $0 = -6V + 2(I_2 - I_1) + 6(I_3 - I_1) - 3I_1$

M_2: $0 = 6(I_1 - I_3) + 12(I_2 - I_3) + 12V$

M_3: $0 = -24V - 10I_2 - 6I_2 + 12(I_3 - I_2) + 2(I_1 - I_2)$

$6 = -11I_1 + 2I_2 + 6I_3$

$-12 = 6I_1 - 18I_3 + 12I_2$

$24 = -30I_2 + 2I_1 + 12I_3$

O bien

$$\Delta S = \begin{vmatrix} -11 & 2 & 6 \\ 6 & 12 & -18 \\ 2 & -30 & 12 \end{vmatrix} = 2916$$

$$I_1 = \frac{\begin{vmatrix} 6 & 2 & 6 \\ -12 & 12 & -18 \\ 24 & -30 & 12 \end{vmatrix}}{2916} = -\frac{2520}{2916} = -864\,mA \quad \checkmark$$

$$I_2 = \frac{\begin{vmatrix} -11 & 6 & 6 \\ 6 & -12 & -18 \\ 2 & 24 & 12 \end{vmatrix}}{2916} = -\frac{2808}{2916} = -962\,mA \quad \checkmark$$

$$I_3 = \frac{\begin{vmatrix} -11 & 2 & 6 \\ 6 & 12 & -12 \\ 2 & -30 & 24 \end{vmatrix}}{2916} = -\frac{768}{2916} = -263\,mA \quad \checkmark$$

e) HAY QUE CAMBIAR LOS 3Ω POR UNA REQ DE

$REQ = \frac{RV\,3\Omega}{3\Omega + RV} = \frac{30}{103}$

Y RECALCULAR LAS MALLAS

} DAN NEGATIVAS PORQUE ME EQUIVOQUE EL SENTIDO

b)

$P_{BAT} = 24 I_2 + 6 I_1 - 12 I_3 = 25{,}116\,W$

$P_{3\Omega} = 3 I_1^2 = 2{,}23\,W$

$P_{6\Omega} = 6 I_2^2 = 5{,}55\,W \quad \checkmark$

$P_{6\Omega\ I_1} = 6(I_3 - I_1)^2 = 2{,}76\,W$

$P_{10\Omega} = 10 I_2^2 = 9{,}254\,W$

$P_{2\Omega} = 2(I_2 - I_1)^2 = 0{,}079\,W$

$P_{12\Omega} = 12(I_3 - I_2)^2 = 5{,}863\,W$

c) $Q = P \cdot t$

$Q = 0{,}079 \cdot 1800$

$\boxed{Q = 34{,}2\,J}$