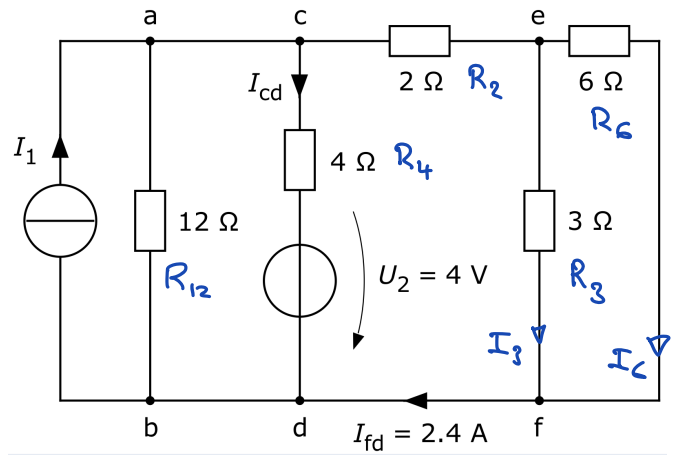


Question 2 - Corrigé

1) Courant dans la résistance de 6Ω ? Diviseur de courant:

$$U_{ef} = R_6 \cdot I_6 = R_3 \cdot I_3 \Rightarrow I_3 = \frac{R_6}{R_3} \cdot I_6 = 2 \cdot I_6$$

$$I_3 + I_6 = I_{fd} \Rightarrow 3 \cdot I_6 = 2.4 A \Rightarrow \underline{\underline{I_6 = 0.8 A}}$$



2) $U_{ab} = ?$; $I_{cd} = ?$

$$\underline{\underline{U_{ab} = U_{cd} = U_{ce} + U_{ef} = R_2 \cdot I_{fd} + R_6 \cdot I_6 = 2 \cdot 2.4 + 6 \cdot 0.8 = 9.6 V}}}$$

$$I_{cd} \cdot R_4 + U_2 = U_{cd} = U_{ab} \Rightarrow \underline{\underline{I_{cd} = \frac{U_{ab} - U_2}{R_4} = \frac{9.6 - 4}{4} = 1.4 A}}}$$

$$\begin{aligned} 3) \quad I_1 = ? \quad I_1 &= I_{ab} + I_{cd} + I_{fd} = \frac{U_{ab}}{R_{12}} + I_{cd} + I_{fd} \\ &= \frac{9.6}{12} + 1.4 + 2.4 = \underline{\underline{I_1 = 4.6 A}} \end{aligned}$$

4) P_1 (source I_1) ; P_2 (source U_2).

$$\underline{\underline{P_1 = -U_{ab} \cdot I_1 = -9.6 \cdot 4.6 = -44.16 W \text{ (fournit de l'énergie)}}}$$

$$\underline{\underline{P_2 = U_2 \cdot I_{cd} = 4.0 \cdot 1.4 = 5.6 W \text{ (absorbe en.)}}}$$