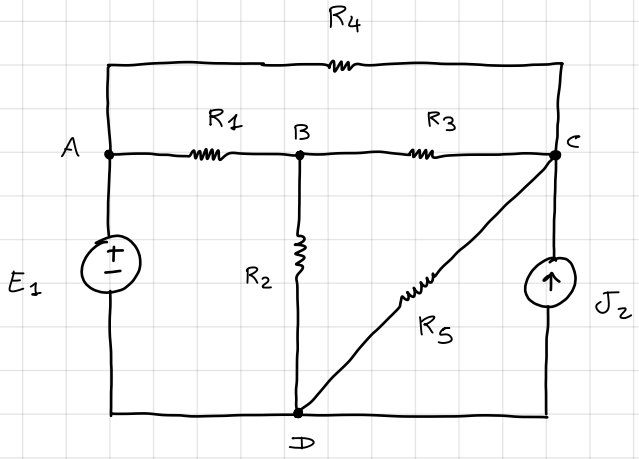
ES 2



DATI

A $R_1 = 100\ \Omega$

B $R_2 = 80\ \Omega$

C $R_3 = 60\ \Omega$

D $R_4 = 120\ \Omega$

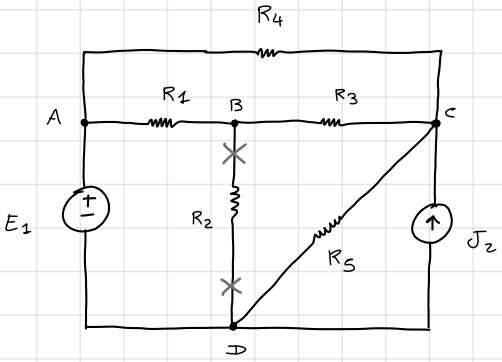
E $R_5 = 200\ \Omega$

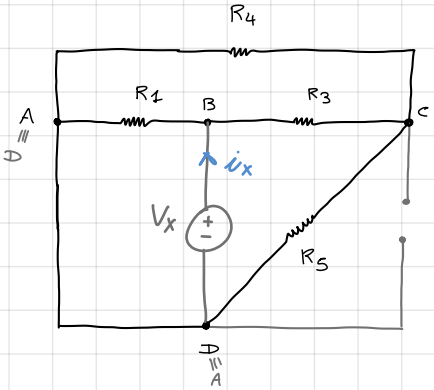
X $E_1 = 20\ V$

Y $J_2 = 0.8\ A$

Q: $P_1, P_2, P_3 = ?$

Thevenin

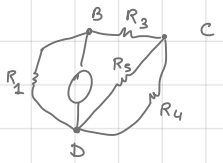




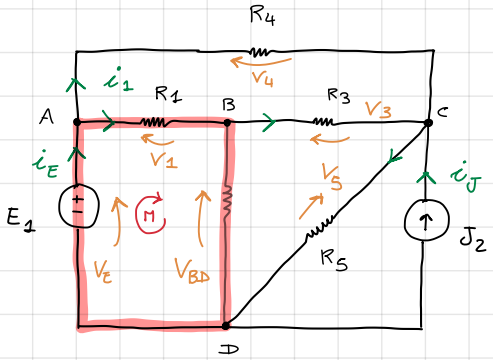
$R_{th\,BD}$

$R_{th} = [(R_4 // R_5) + R_3] // R_1$

$= 57.45\ \Omega = R_{th}$



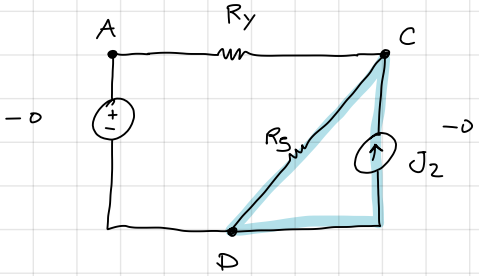
$V_{BD} = E_{th} = ?$



E_1

LKT_M: $-V_{E_1} + V_1 + V_{BD} = 0 \Rightarrow V_{BD} = V_{E_1} - V_1$

ma $V_1 = R_1 \cdot i_1$ → serve i_E e i_1

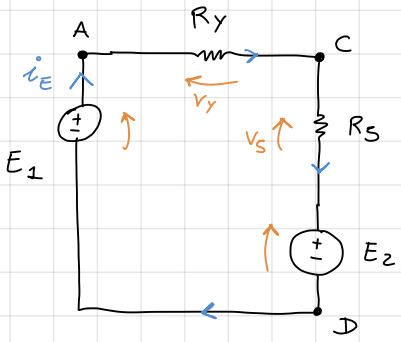


$\rightarrow$

$E_2 = J_2 \cdot R_5$

$R_{th} = R_5$

$R_y = R_4 // (R_1 + R_3)$



$-E_1 + V_y + V_S + E_2 = 0 \rightarrow -E_1 + R_y i_y + R_S i_y + E_2 = 0$

$\rightarrow i_y = \frac{E_1 - E_2}{(R_y + R_S)} = \frac{E_1 - J_2 R_S}{R_y + R_S} = -0.52\ A = i_E$

$\Rightarrow i_1 = i_E \cdot R$