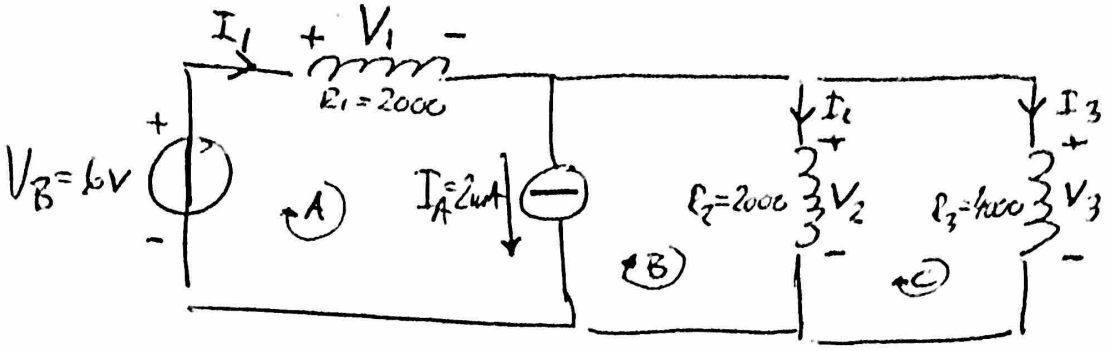
PROBLEM 4



(A) $V_B - V_1 + V_A = 0$

$V_B + V_A = V_1$

$6 + 4 = V_1$

$V_1 = 10\ V$

(B) $-V_2 + V_A = 0$

$V_A = V_2$

$V_A = I_2 \cdot R_2$

$V_A = 0{,}002 \cdot 2000$

$V_A = 4\ V$

(C) $-V_3 + V_2 = 0$

$V_2 = V_3$

$4 = V_3$

$I_1 = \frac{V_1}{R_1}$

$I_1 = \frac{10}{2000}$

$I_1 = 0{,}005\ A$

$I_2 = \frac{V_2}{R_2}$

$I_2 = \frac{4}{2000}$

$I_2 = 0{,}002\ A$

$I_3 = \frac{V_3}{R_3}$

$I_3 = \frac{4}{4000}$

$I_3 = 0{,}001\ A$

a) $P_1 = V_1 \cdot I_1 \rightarrow 10 \cdot 0{,}001 = 0{,}001 \rightarrow 10\ mW$

$P_2 = V_2 \cdot I_2 \rightarrow 4 \cdot 0{,}002 = 0{,}008 \rightarrow 8\ mW$

$P_3 = V_3 \cdot I_3 \rightarrow 4 \cdot 0{,}001 = 0{,}004 \rightarrow 4\ mW$

b) $P_A = V_A \cdot I_A \rightarrow 4 \cdot 0{,}002 = 0{,}008 \rightarrow 8\ mW$

$P_B = V_B \cdot I_1 \rightarrow 6 \cdot 0{,}001 = 0{,}006 \rightarrow 6\ mW$