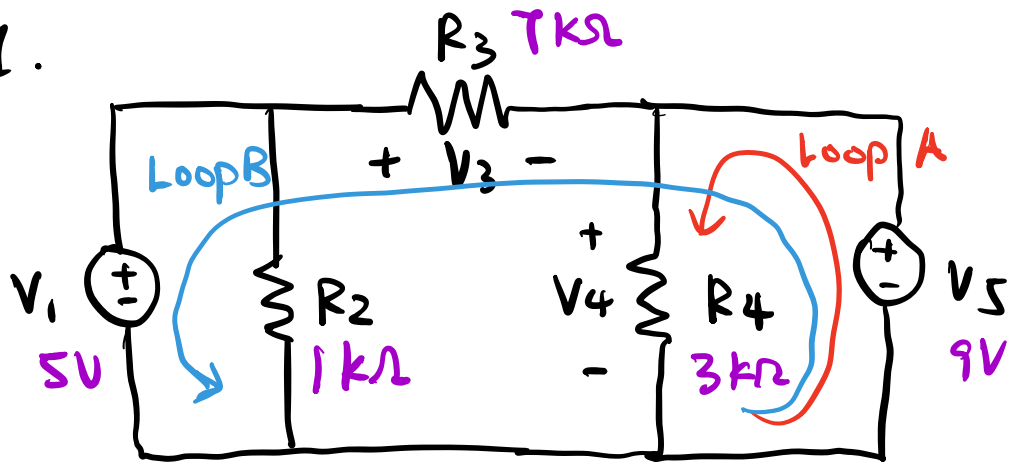


Yuying Zhai

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1.

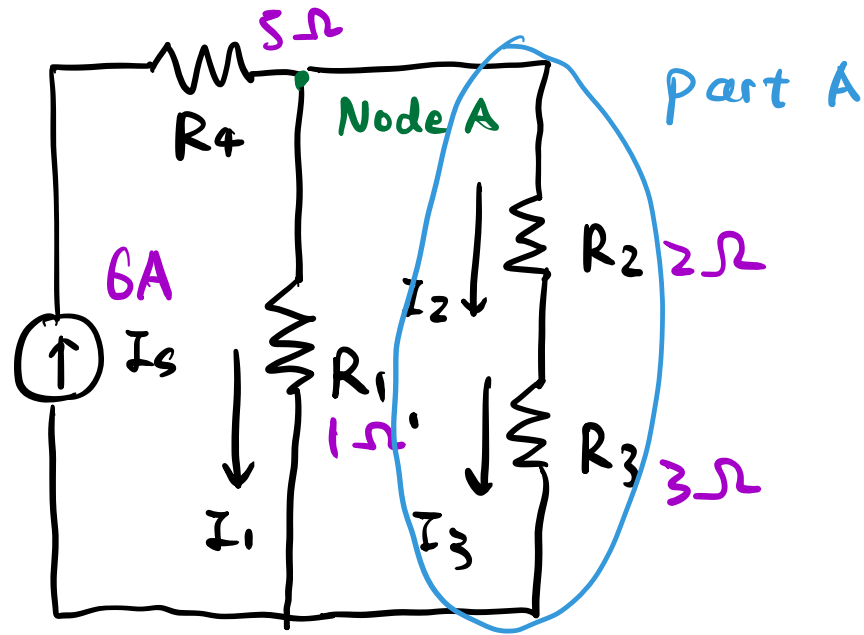


From Kirchhoff Voltage Law, we know:

$$\begin{cases} V_5 = V_4 & (\text{Loop A}) \\ V_5 + V_3 = V_4 \end{cases}$$

$$\begin{aligned} V_4 &= 9V \\ V_3 &= -4V \end{aligned}$$

2.



Since R_2 and R_3 are in series,
we know $R_A = R_2 + R_3 = 5\Omega$. We see that
part A and R_1 are in parallel, thus we
know:

$$\begin{cases} I_s = I_1 + I_2 \\ R_A I_2 = R_1 I_1 \end{cases}$$

$$\Rightarrow \begin{cases} I_1 + I_2 = 6A \\ I_2 \cdot 5\Omega = I_1 \cdot 1\Omega \end{cases}$$

$$\Rightarrow \begin{cases} \boxed{I_1 = 5A} \\ I_2 = 1A \end{cases}$$