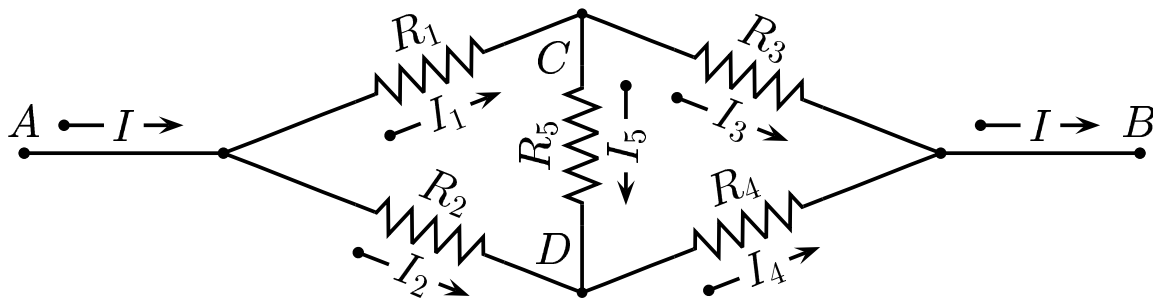


The current enters at A and leaves at B .



The loop equations $ACDA$ is $-I_1 R_1 - I_5 R_5 + I_2 R_2 = 0$.

Determine the equation for the loop $CDBC$ in terms of I_1 , I_2 , and I_5 .

- A) $(I_1 - I_2) R_3 - (I_2 + I_5) R_4 + I_5 R_5 = 0$
- B) $(I_1 - I_3) R_3 - (I_2 - I_5) R_4 + I_5 R_5 = 0$
- C) $-(I_1 - I_5) R_3 + (I_2 + I_5) R_4 + I_5 R_5 = 0$
- D) $(I_5 - I_1) R_3 + (I_2 - I_5) R_4 + I_5 R_5 = 0$
- E) $(I_1 + I_5) R_3 - (I_5 - I_2) R_4 - I_5 R_5 = 0$

Hint: Use the node equations $I_3 = I_1 - I_5$ and $I_4 = I_2 + I_5$.

The right-hand loop equation is

$$\begin{aligned} -I_3 R_3 + I_4 R_4 + I_5 R_5 &= 0 \\ -(I_1 - I_5) R_3 + (I_2 + I_5) R_4 + I_5 R_5 &= 0 . \end{aligned}$$

Answer **C**.

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