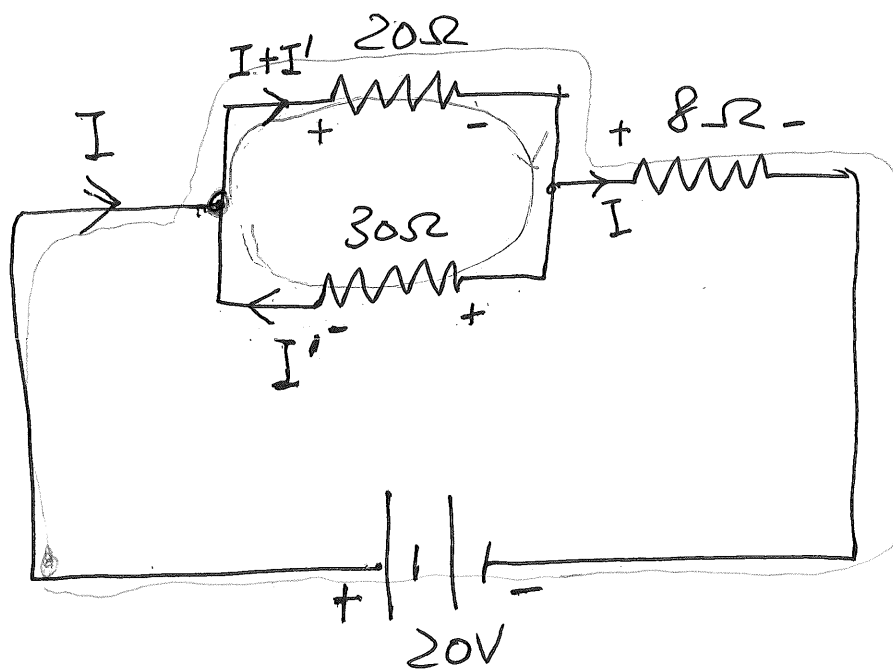




$\begin{matrix} + \\ \uparrow \\ - \end{matrix} \oplus \quad \begin{matrix} + \\ \uparrow \\ - \end{matrix} \ominus$: From + to - : negative
 From - to + : positive.

$$-(20)(I+I') - (30)I' = 0$$

$$\Rightarrow 20I + 50I' = 0$$

$$\Rightarrow 2I + 5I' = 0 \quad \text{--- (1)}$$

From + to - : positive
 From - to + : negative

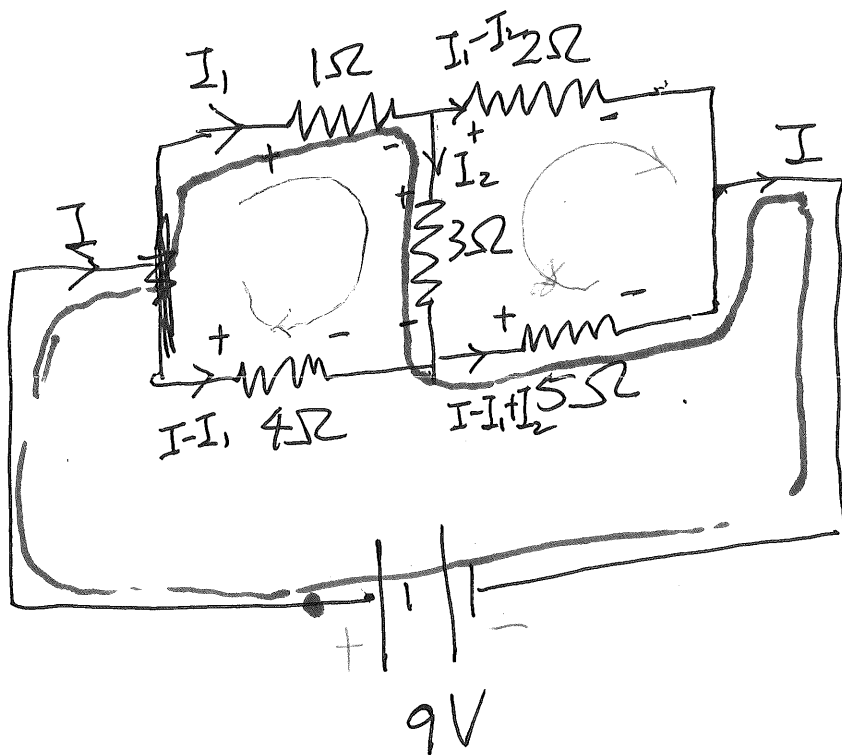
$$+(20)(I+I') + (8)I - 20 = 0$$

$$\Rightarrow 28I + 20I' = 20 \quad \text{--- (2)}$$

$$(2) - 4 \times (1) \Rightarrow 20I = 20$$

$$\Rightarrow I = 1A$$

$$\text{Sub. into (1): } 2 \times 1 + 5I' = 0 \Rightarrow I' = -\frac{2}{5}A$$

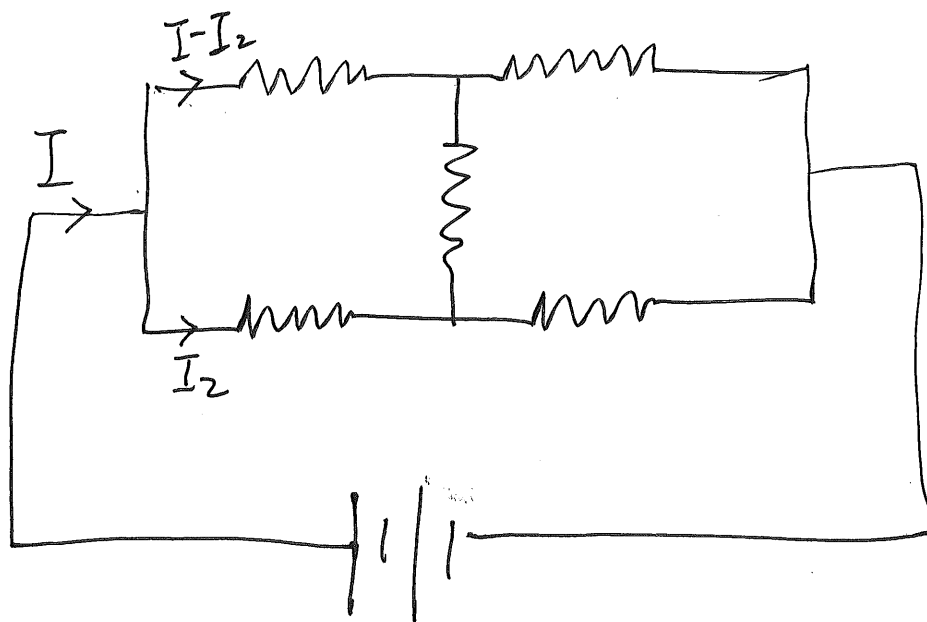
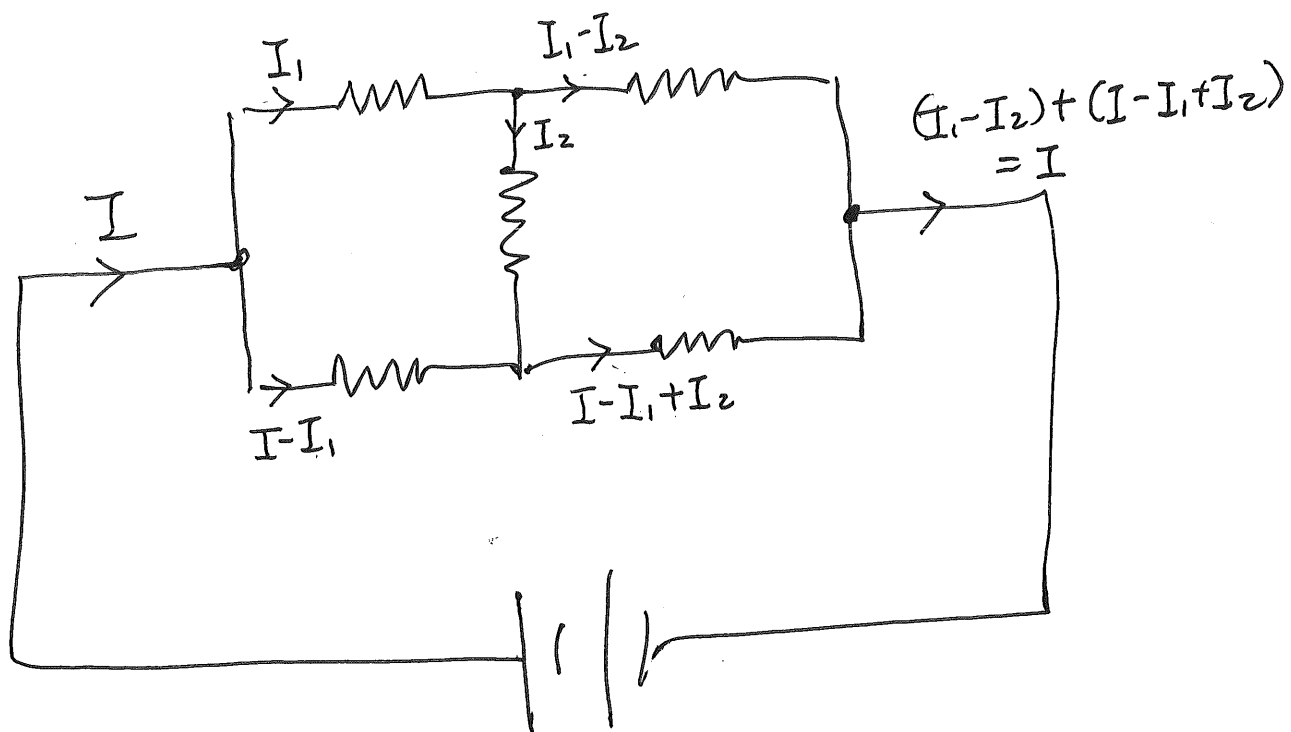


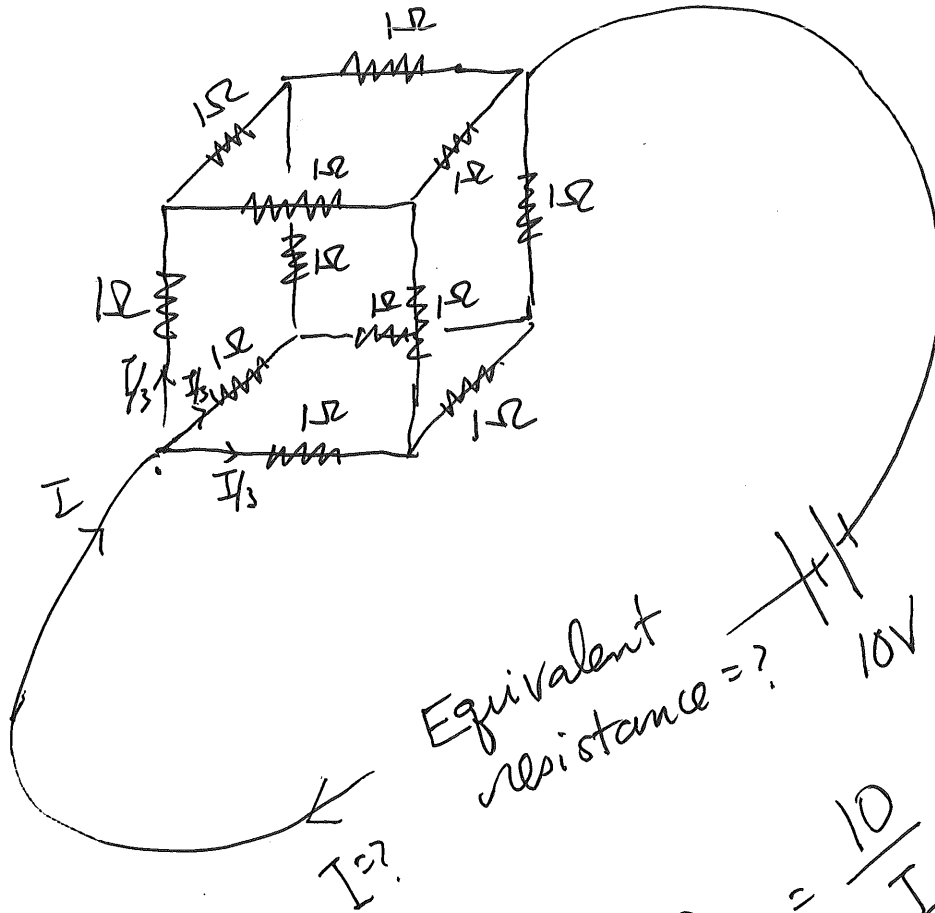
From + to - : positive
 - to + : negative

$$(1) I_1 + (3) I_2 - (4) (I - I_1) = 0$$

$$(2) (I_1 - I_2) - (5) (I - I_1 + I_2) - (3) (I_2) = 0$$

$$(1) I_1 + (3) I_2 + (5) (I - I_1 + I_2) - 9 = 0$$





Equivalent
resistance = ?

$$R_{\text{eff}} = \frac{10}{I}$$