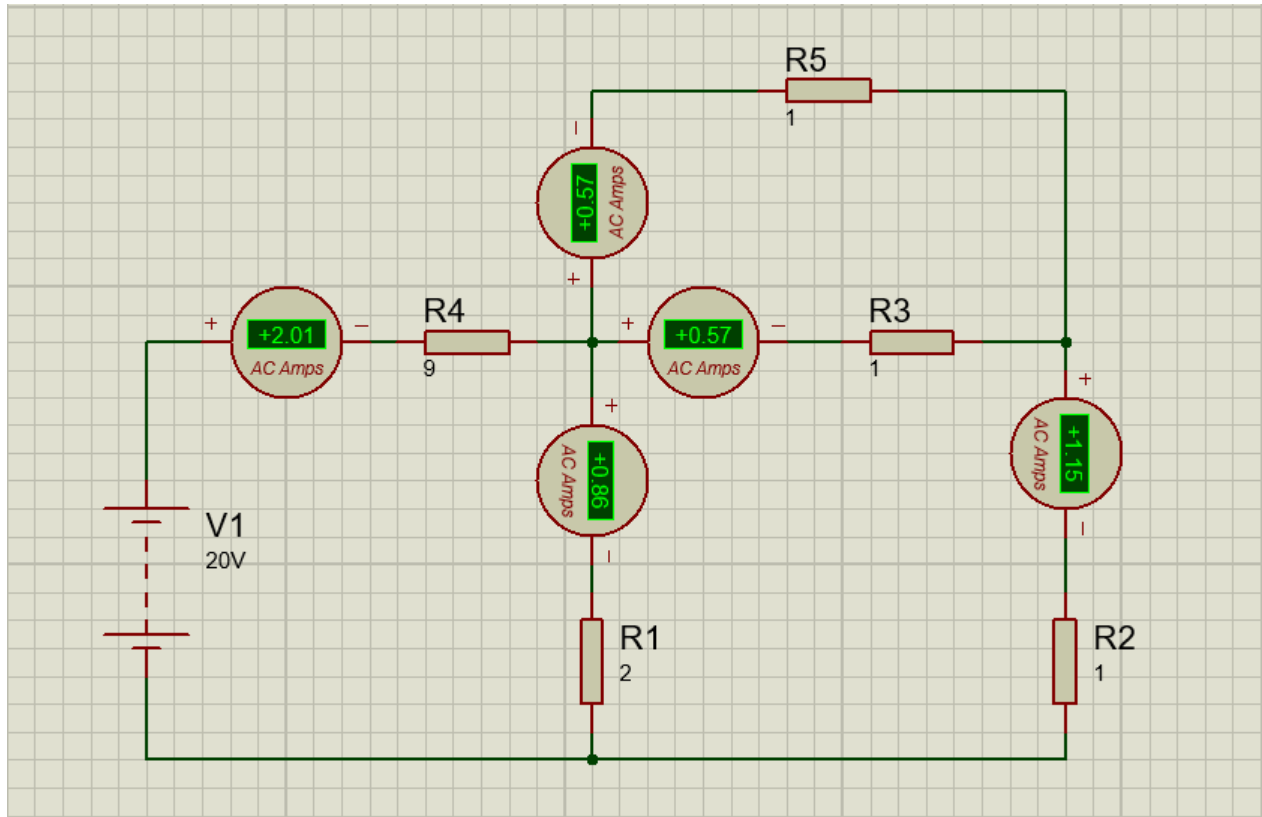


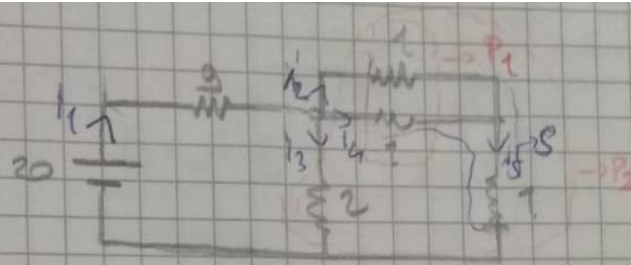
SORU 1 :



Tablo

	i_4	i_2	i_3	i_4	i_5
Manuel	2,028	0,579	0,967	0,579	1,158
Simulasyon	2,01	0,57	0,966	0,57	1,15

İŞLEMLER :



$$R \Rightarrow P_1 = \frac{1}{1} + \frac{1}{2} = \frac{1}{2}$$

$$P_2 = \frac{2}{3} + \frac{1}{2} = \frac{2}{6} + \frac{1}{2} = \frac{6}{7}$$

$$\frac{1}{2} + 1 = \frac{3}{2}$$

$$R_{eq} = 6 \times \frac{1}{2} + 9 = \frac{69}{2}$$

$$I \Rightarrow \textcircled{1} I = \frac{V}{R} = \frac{20}{\frac{69}{2}} = \frac{20 \cdot 2}{69} = 2,028$$

$$i_1 = i_2 + i_3 + i_4$$

$$i_2 = i_5 + i_3$$

$$i_5 = i_4 + i_2$$

$$\textcircled{2} \frac{3}{2} \cdot i_5 = 2 \cdot i_3$$

$$7k = 2,028$$

$$k = 0,289$$

$$i_5 = 1,158$$

$$i_3 = 0,867$$

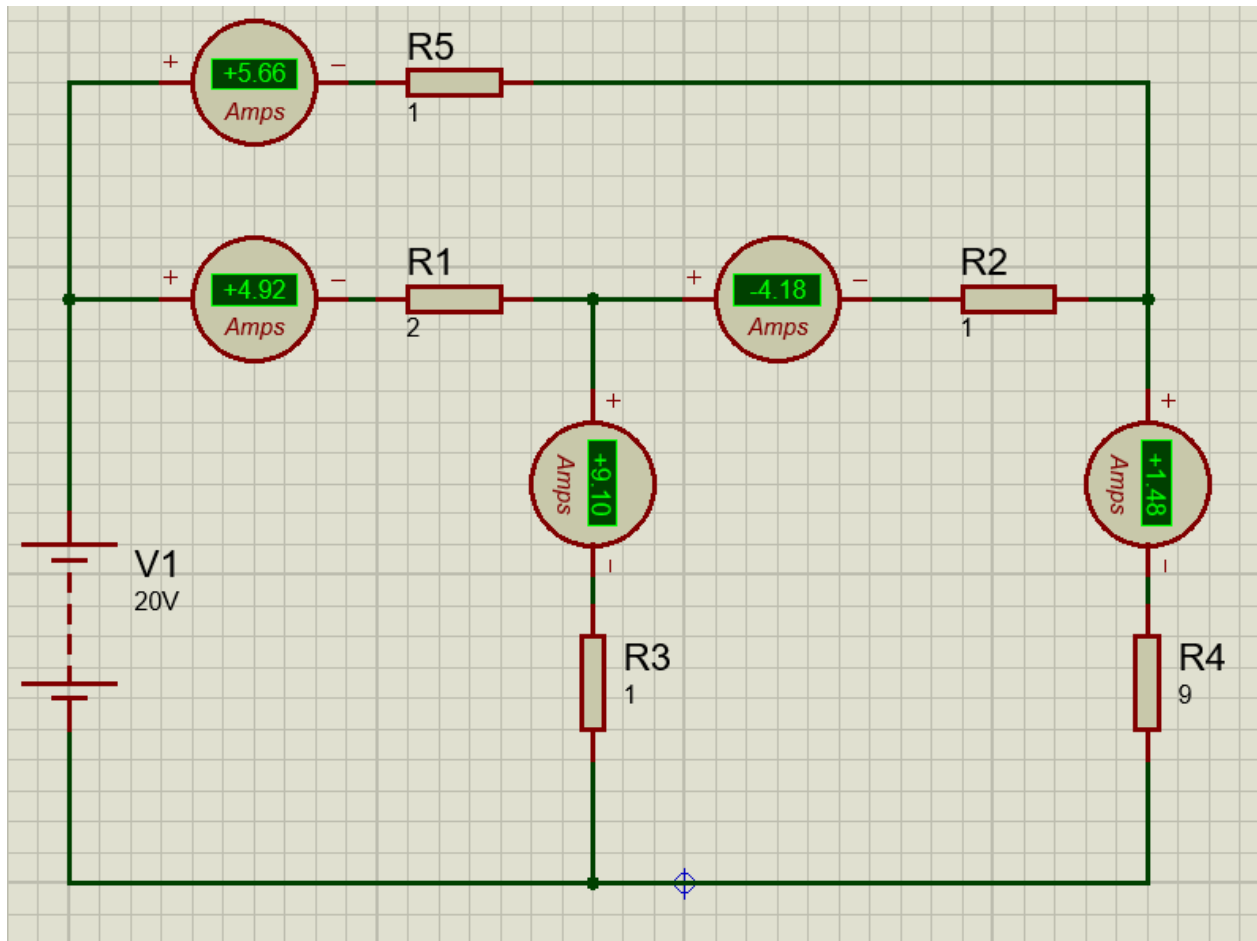
$$\frac{3i_5}{2k} = \frac{4i_3}{3k}$$

$$\textcircled{3} 1 \cdot i_4 = i_3 \cdot 1$$

$$i_4 + i_3 = i_5 = 1,158$$

$$i_4 = i_3 = 0,579$$

SORU2:

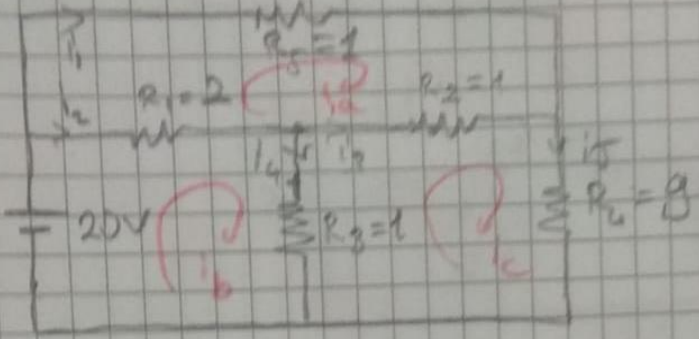


TABLO2:

Date :/...../.....

	i_1	i_2	i_3	i_4	i_5
Manuel	4,6	4	-3,4	7,4	1,2
Simulasyon	5,6	4,92	-4,18	9,10	1,48

İŞLEMLER2:



$i \rightarrow$

$$\begin{aligned} (1) \rightarrow 20 + 2(i_b - i_a) + i_b - i_c &= 0 \rightarrow -i_a + 3i_b - i_c = 20 \\ (2) \rightarrow 2(i_a - i_b) + i_a + i_b - i_c &= 0 \rightarrow 4i_a - 2i_b - i_c = 0 \\ (3) \rightarrow i_c - i_b + i_c - i_a + 8i_c &= 0 \rightarrow -i_a - i_b + 11i_c = 0 \end{aligned}$$

$$\begin{pmatrix} -1 & 3 & -1 \\ 4 & -2 & -1 \\ -1 & -1 & 11 \end{pmatrix} \begin{pmatrix} i_b \\ i_a \\ i_c \end{pmatrix} = \begin{pmatrix} 20 \\ 0 \\ 0 \end{pmatrix}$$

$$\begin{aligned} i_a &= \frac{23}{5} = 4,6 \\ i_b &= \frac{47}{5} = 9,4 \\ i_c &= \frac{6}{5} = 1,2 \end{aligned}$$

$$\begin{aligned} i_1 &= i_a = 4,6 \\ i_2 &= i_b - i_a = 4 \\ i_3 &= i_c - i_a = -3,4 \\ i_4 &= i_b - i_c = 7,4 \\ i_5 &= i_c = 1,2 \end{aligned}$$

AÇIKLAMA :

Değerler arasındaki farkın sebebi özdirençlerin hesaba katılmamasıdır.