LAB-1 DEVRE TEORİSİ

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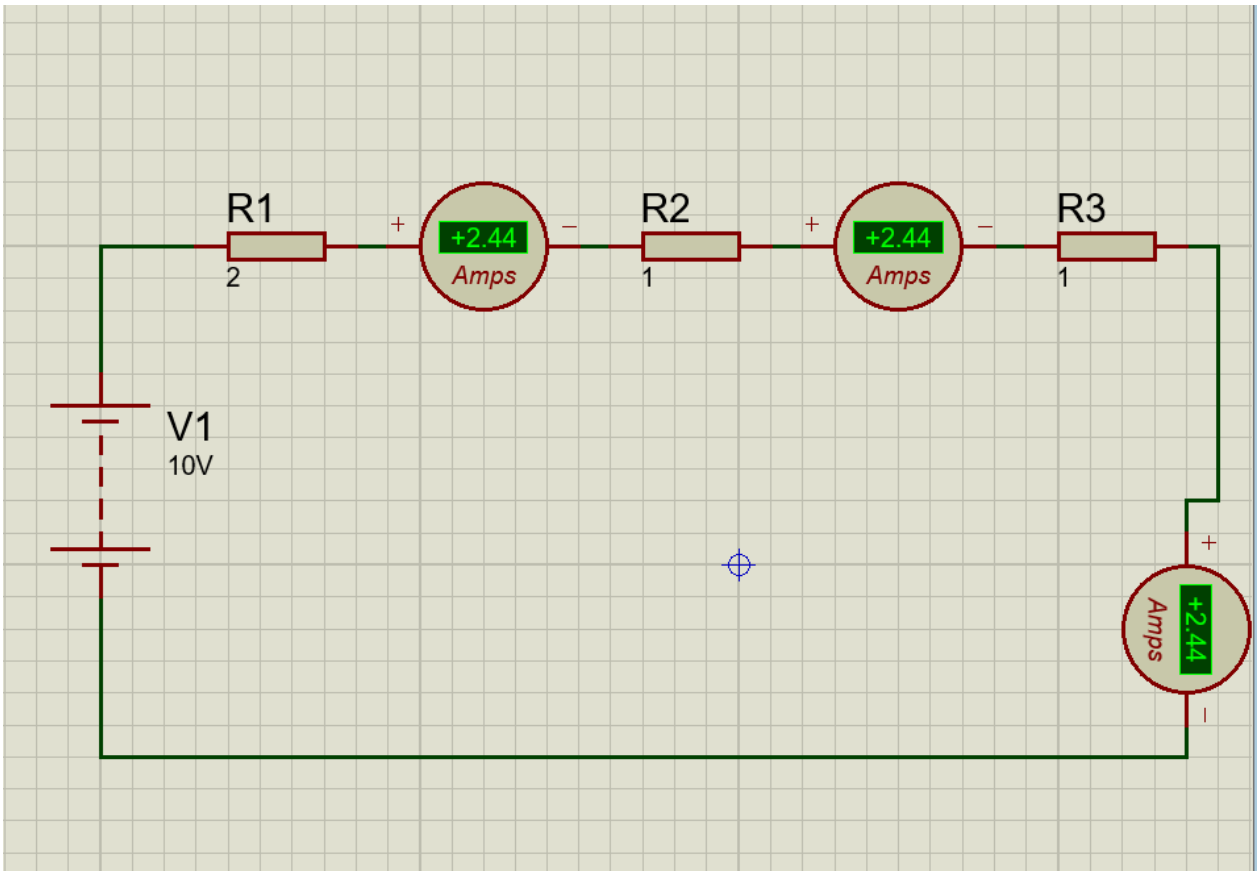
Açıklama: akımlardaki değer farklılıkları özdirençleri ölçmediğimizden kaynaklanıyor.

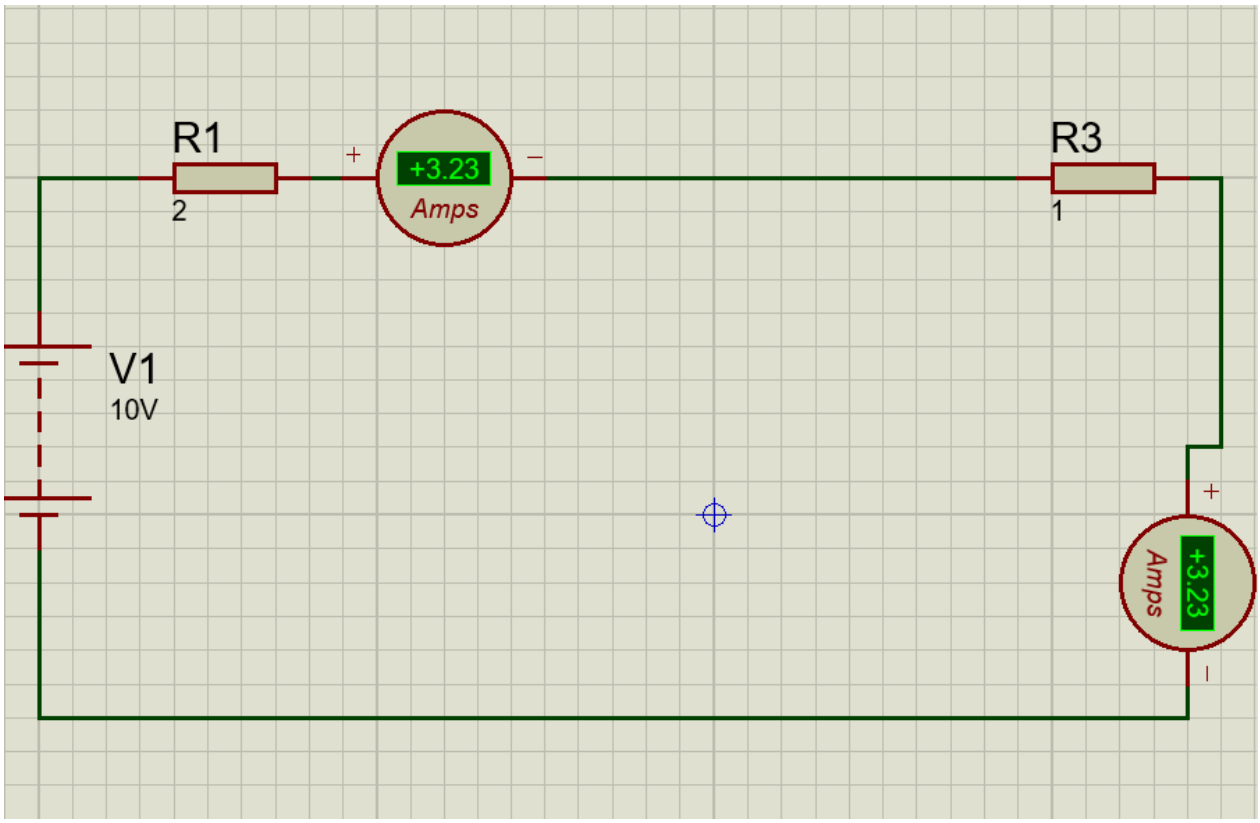
Çözüm 1:

1- Ampermetre Değerleri:

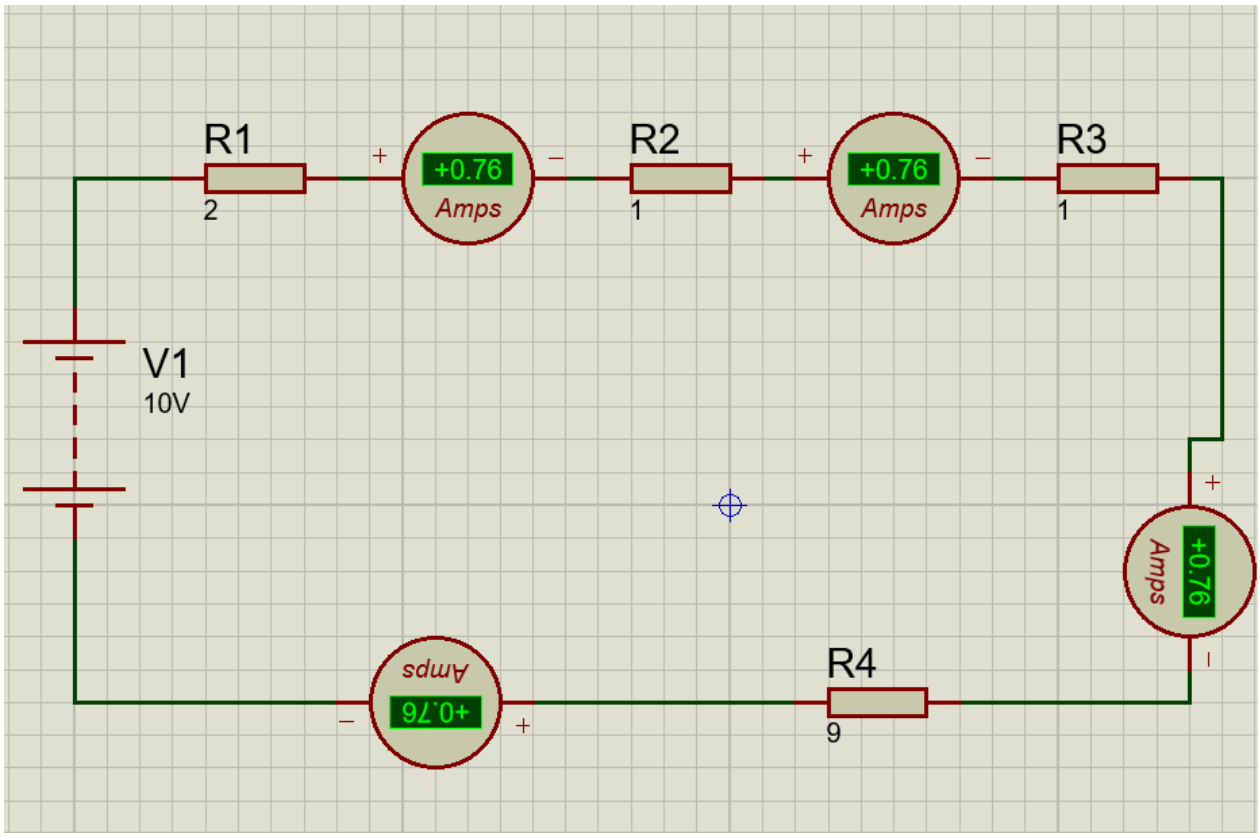
1-



2-

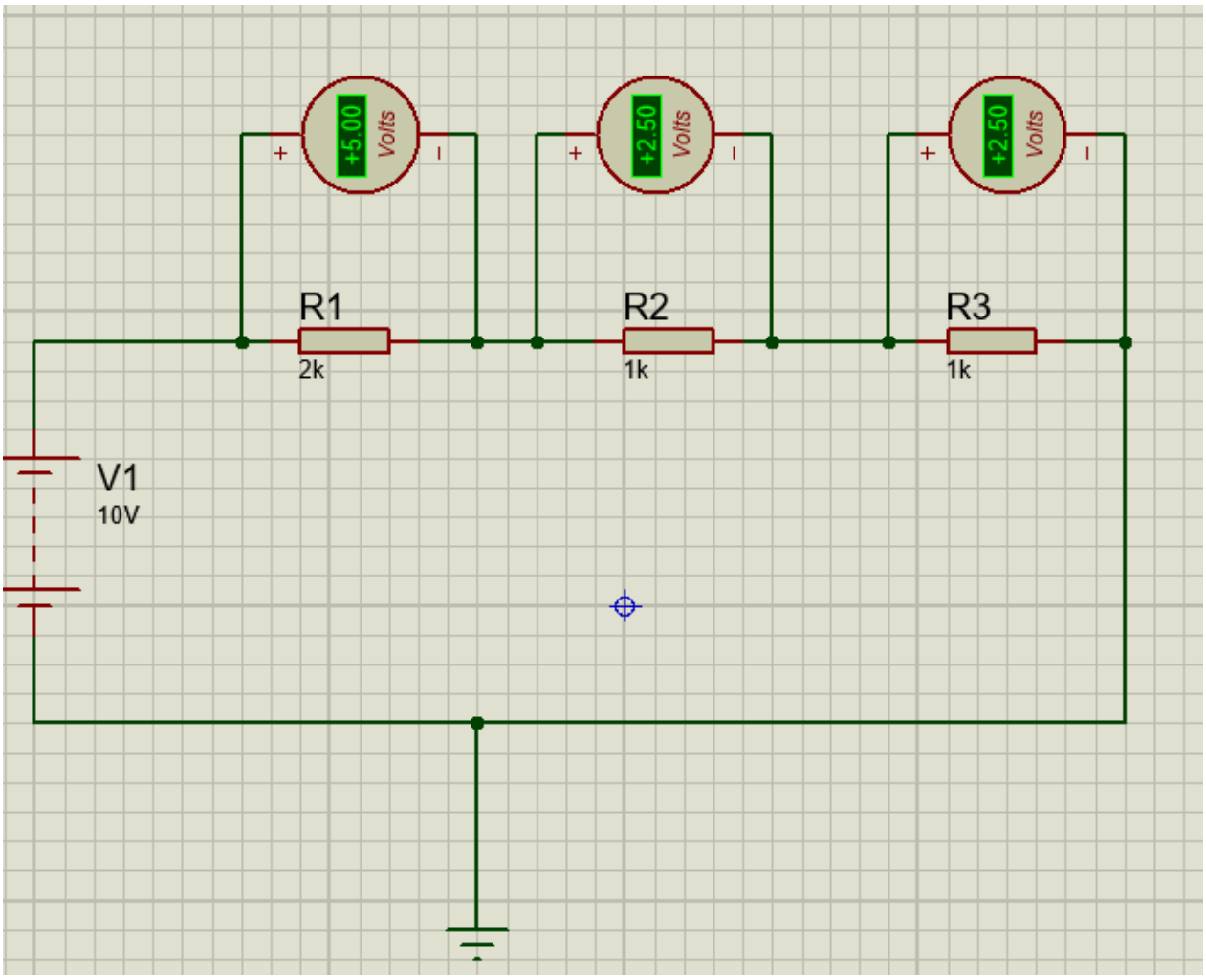

R1
2
+3.23
Amps
R3
1
V1
10V
+3.23
Amps

3-

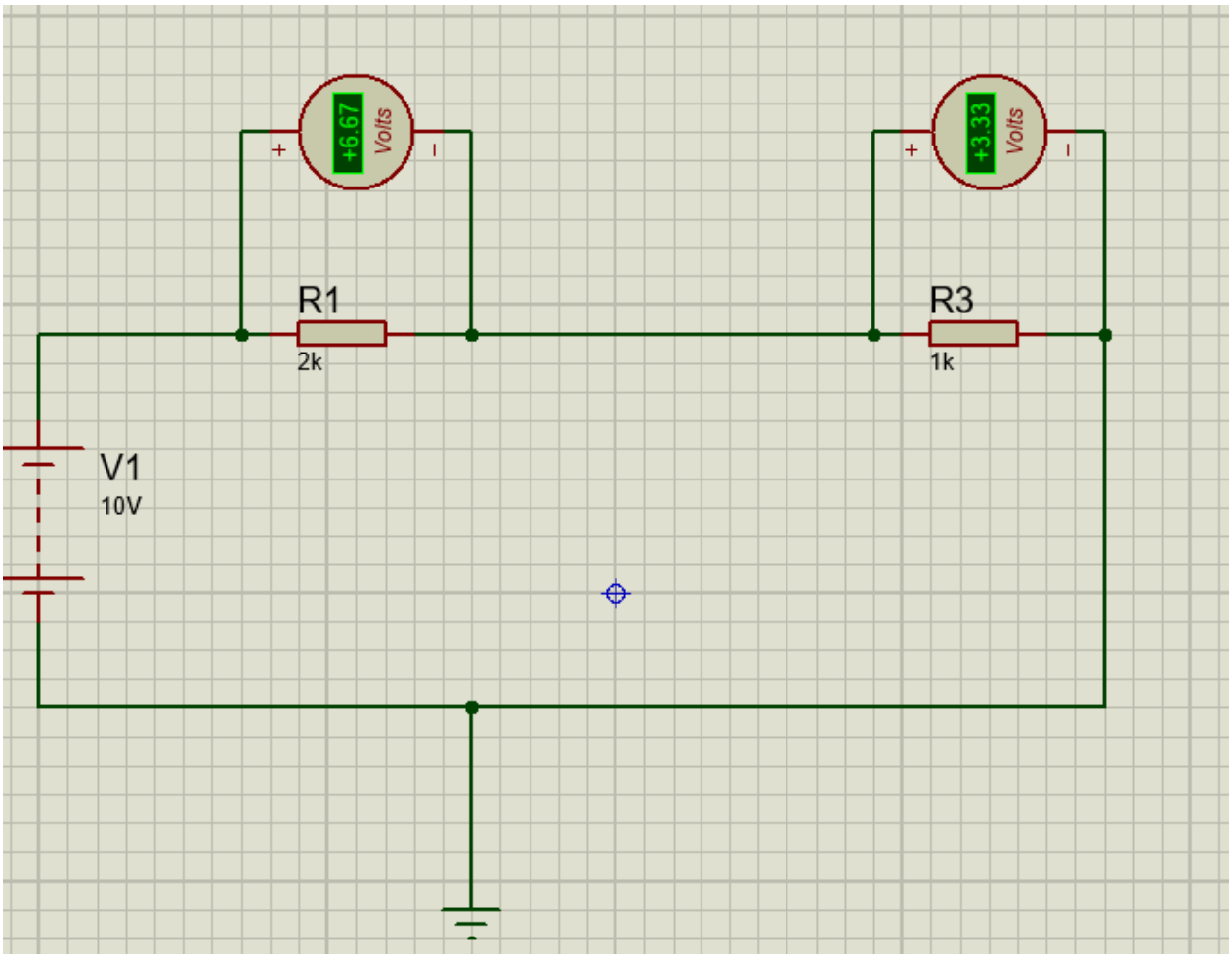

R1
2
+0.76
Amps
R2
1
+0.76
Amps
R3
1
V1
10V
+0.76
Amps
+0.76
Amps
R4
9

2- Voltmetreler:

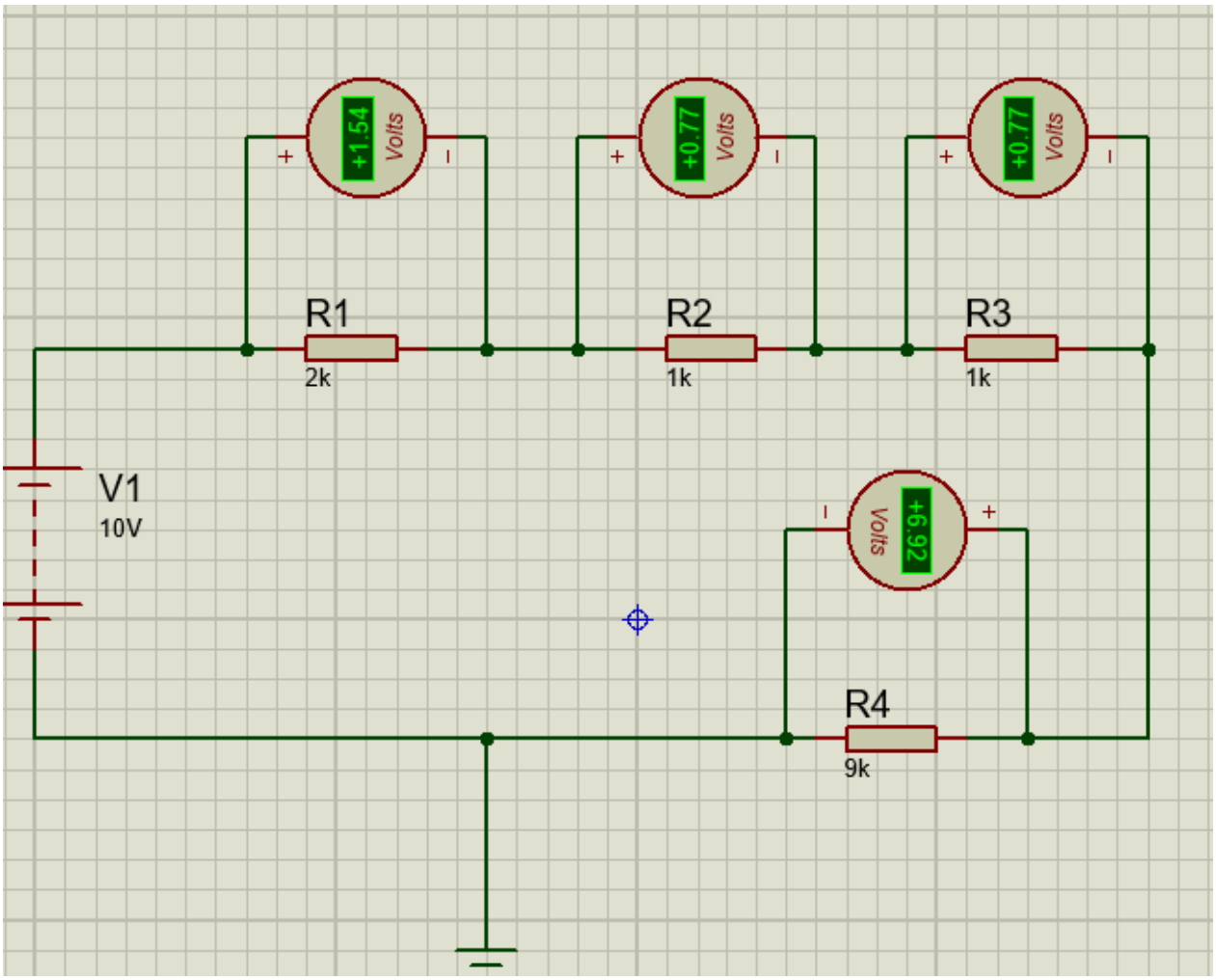
1-



2-



3-


+1.54
Volts
+0.77
Volts
+0.77
Volts
R1
2k
R2
1k
R3
1k
V1
10V
+6.92
Volts
R4
9k

3- Tablo:

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

Durumlar	Ses.	V	V_1	V_2	V_3	V_4	I_0	I_H	R_{es}	P
R_4 direnci yok	R_1 R_2 R_3	10	5	2,5	2,5	—	2,5	2,44	4	
R_2 ve R_4 yok	R_1 R_3	10	6,67	—	3,33	—	3,33	3,23	3	
—	R_1, R_2 R_3, R_4	10	1,54	0,77	0,77	6,92	0,769	0,76	13	

$\Delta 1 \rightarrow R_{Es} = R_1 + R_2 + R_3 = 2 + 1 + 1 = 4$

$I_0 = \frac{V}{R_{Es}} = \frac{10}{4} = 2,5$

$\Delta 2 \rightarrow R_{Es} = R_1 + R_3 = 2 + 1 = 3$

$I_0 = \frac{V}{R_{Es}} = \frac{10}{3} = 3,3\overline{3}$

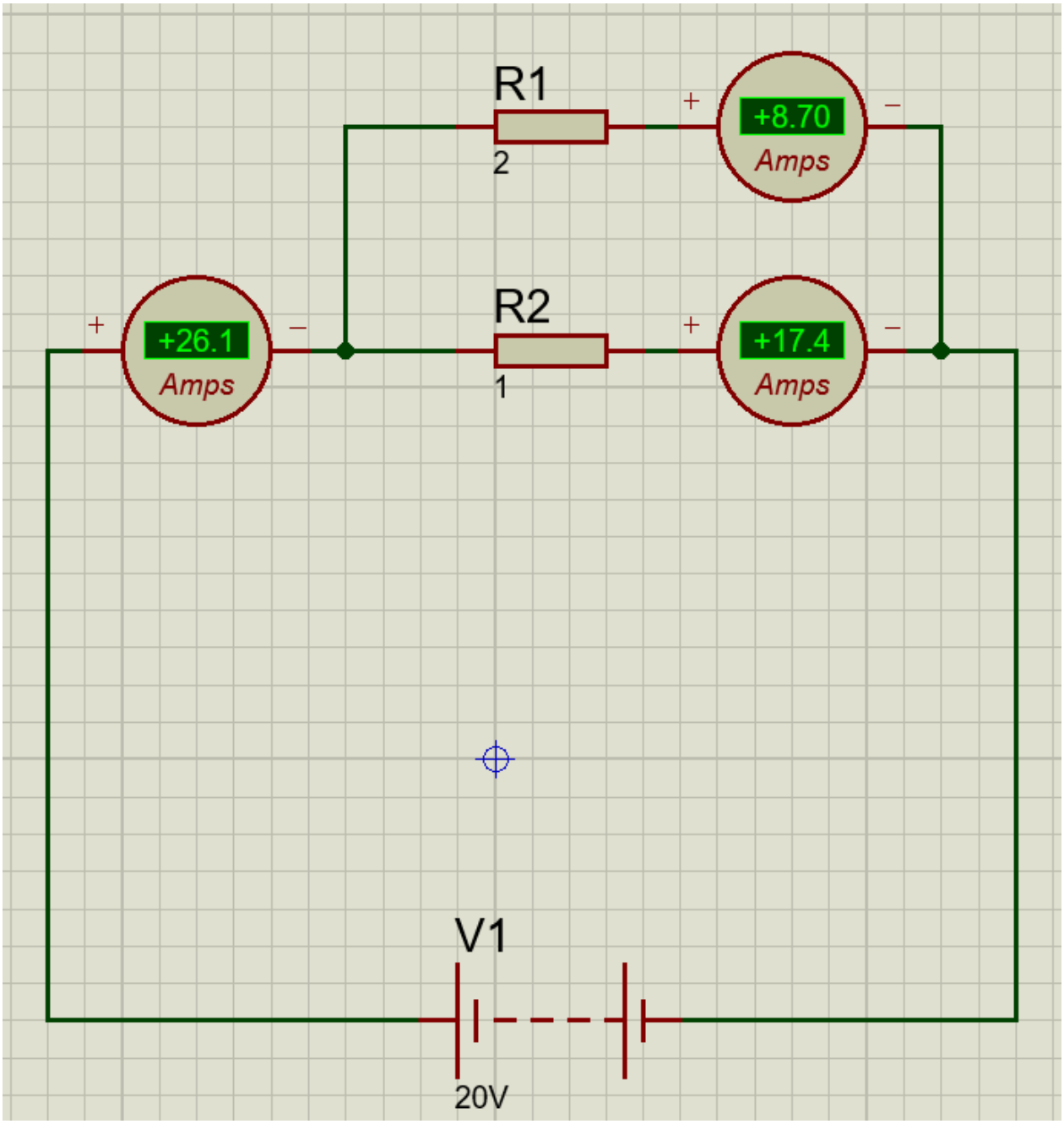
$\Delta 3 \rightarrow R_{Es} = R_1 + R_2 + R_3 + R_4 = 13$

$I_0 = \frac{V}{R_{Es}} = \frac{10}{13} = 0,769$

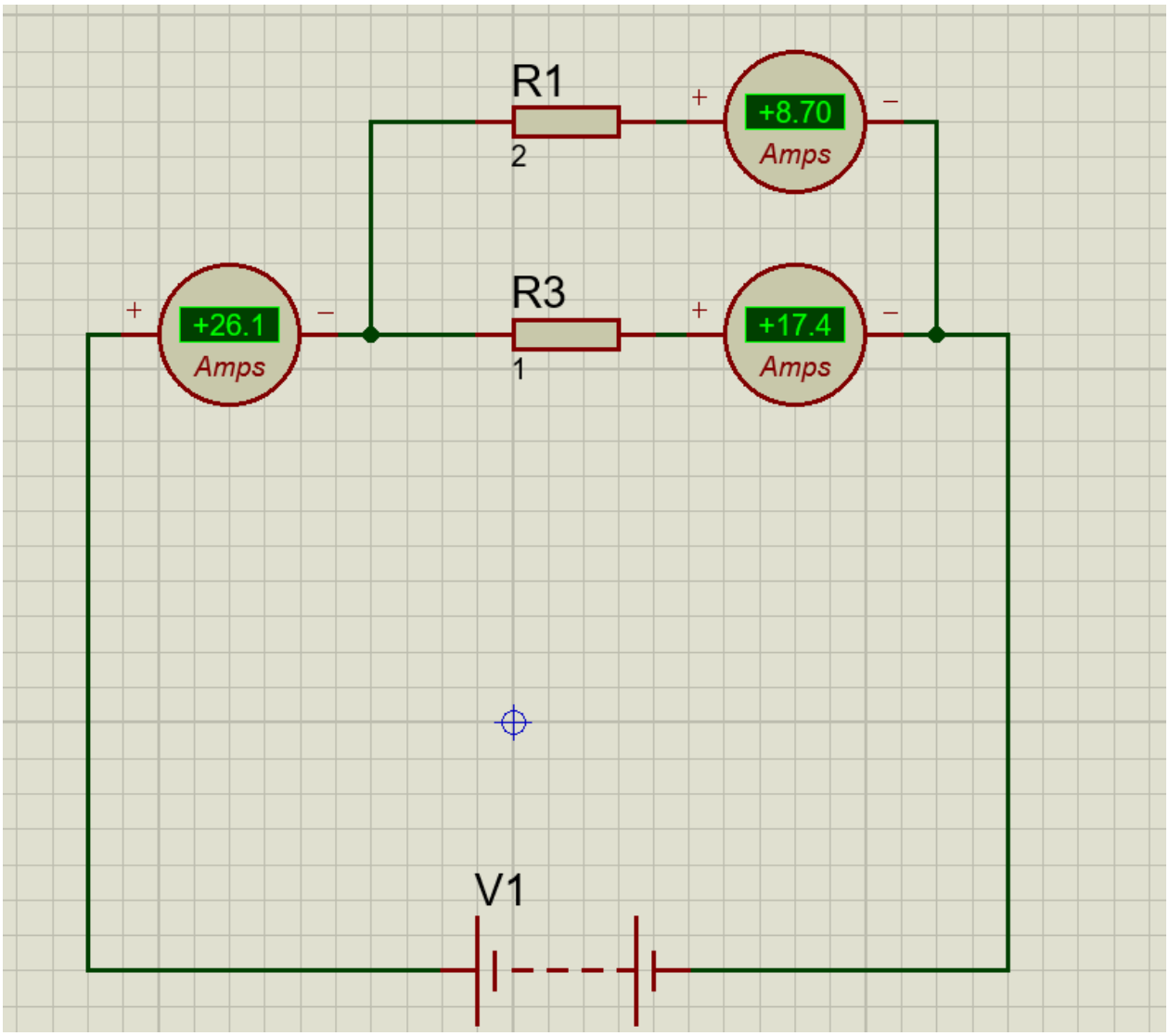
Çözüm 2:

1- Akımlar:

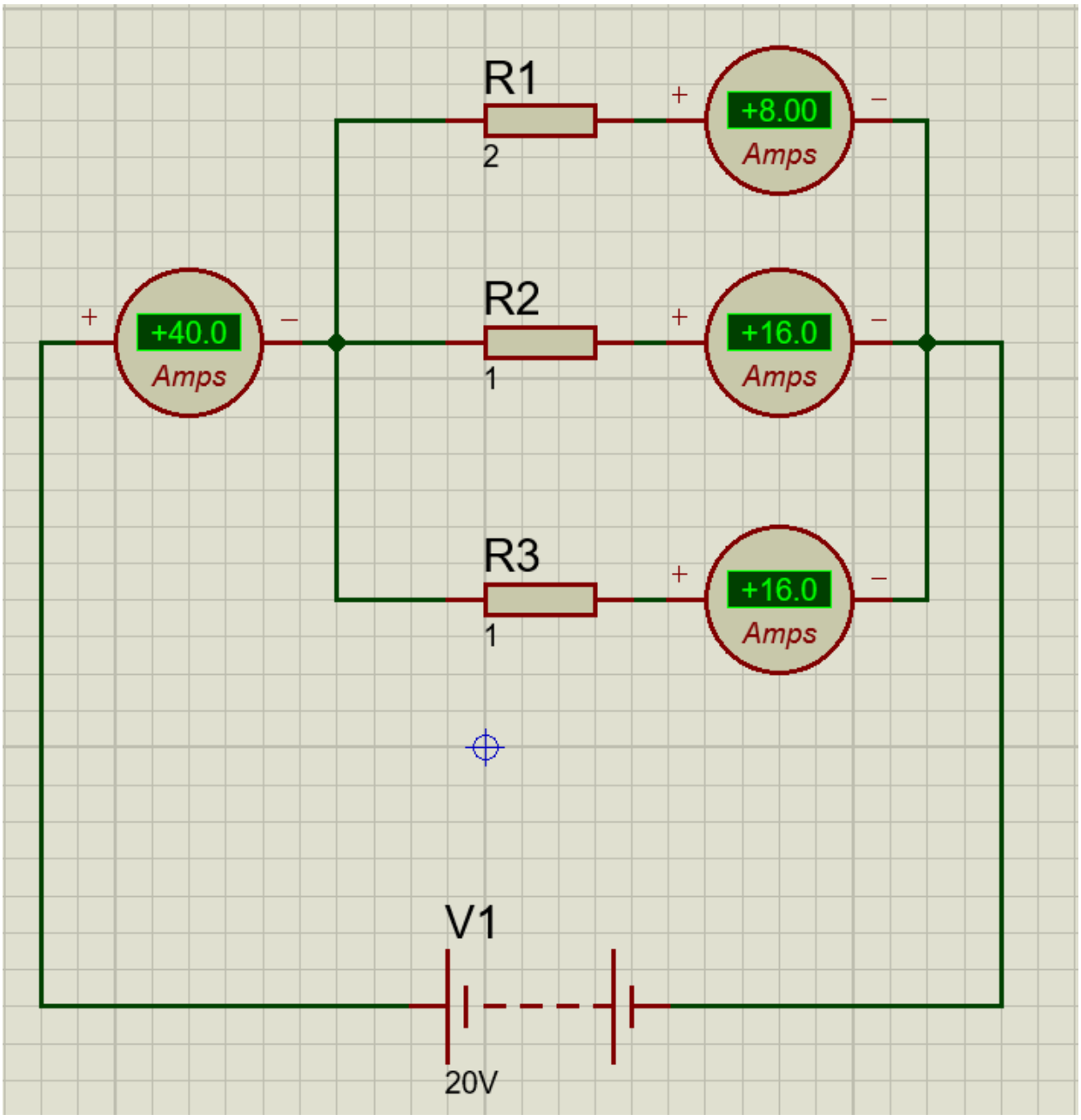
1-



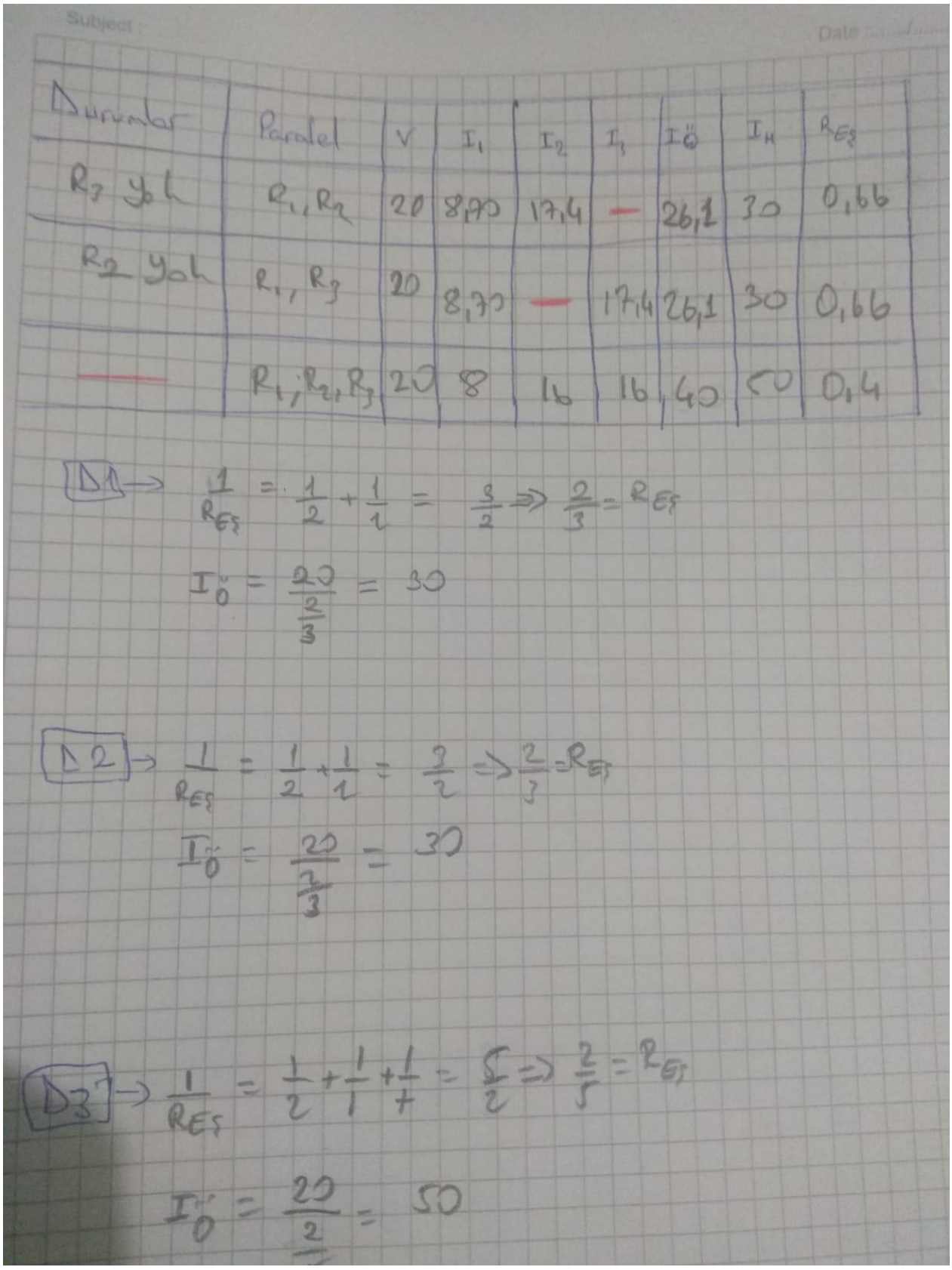
2-



3-



2- Tablo:



Dirençler	Paralel	V	I_1	I_2	I_3	I_0	I_H	$R_{Eş}$
R_3 yok	R_1, R_2	20	8,70	17,4	—	26,1	30	0,66
R_2 yok	R_1, R_3	20	8,70	—	17,4	26,1	30	0,66
——	R_1, R_2, R_3	20	8	16	16	40	50	0,4

$\Delta 1 \rightarrow \frac{1}{R_{Eş}} = \frac{1}{2} + \frac{1}{1} = \frac{3}{2} \Rightarrow \frac{2}{3} = R_{Eş}$

$I_0 = \frac{20}{\frac{2}{3}} = 30$

$\Delta 2 \rightarrow \frac{1}{R_{Eş}} = \frac{1}{2} + \frac{1}{1} = \frac{3}{2} \Rightarrow \frac{2}{3} = R_{Eş}$

$I_0 = \frac{20}{\frac{2}{3}} = 30$

$\Delta 3 \rightarrow \frac{1}{R_{Eş}} = \frac{1}{2} + \frac{1}{1} + \frac{1}{1} = \frac{5}{2} \Rightarrow \frac{2}{5} = R_{Eş}$

$I_0 = \frac{20}{\frac{2}{5}} = 50$