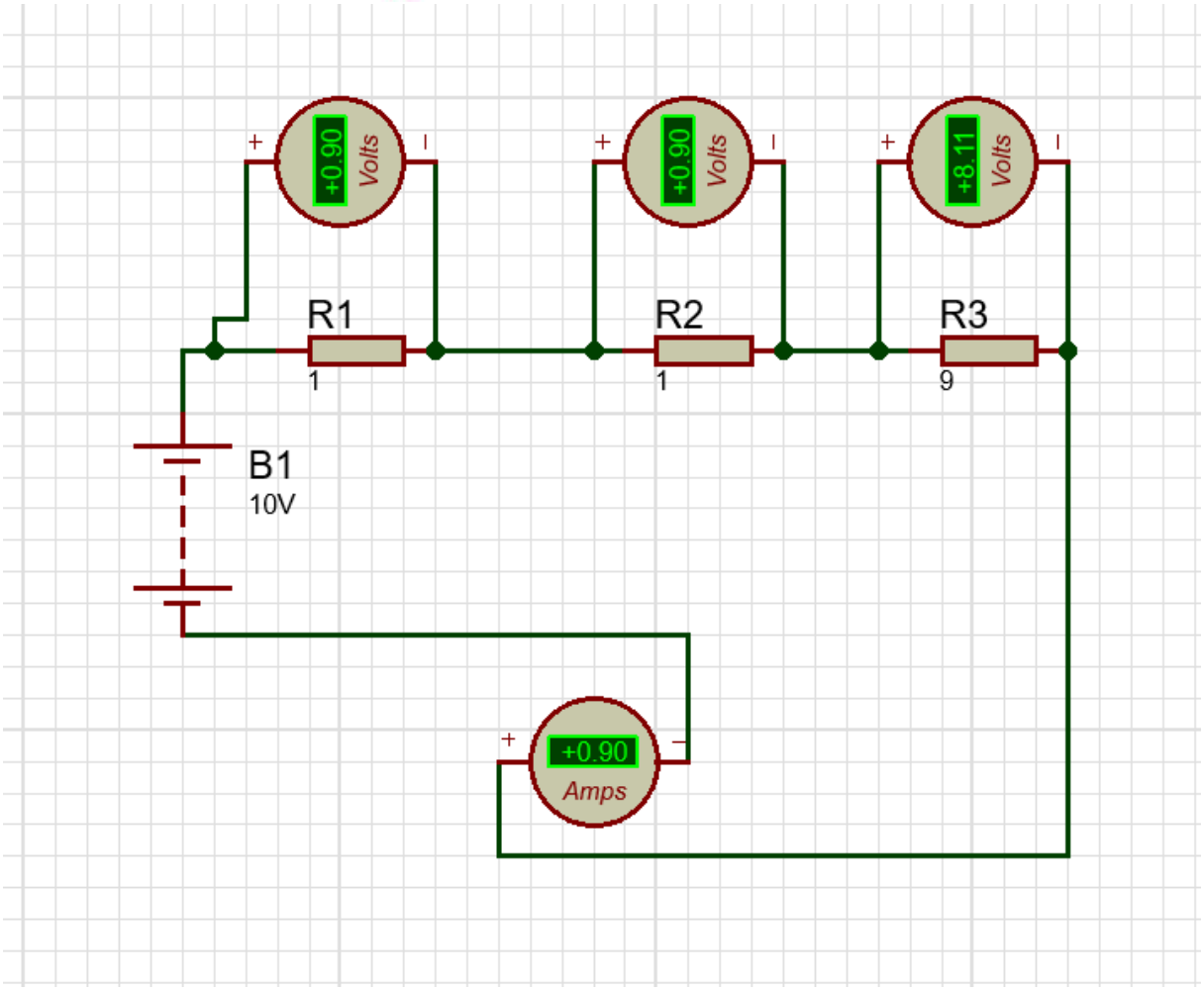
No 20011901 Soru 1

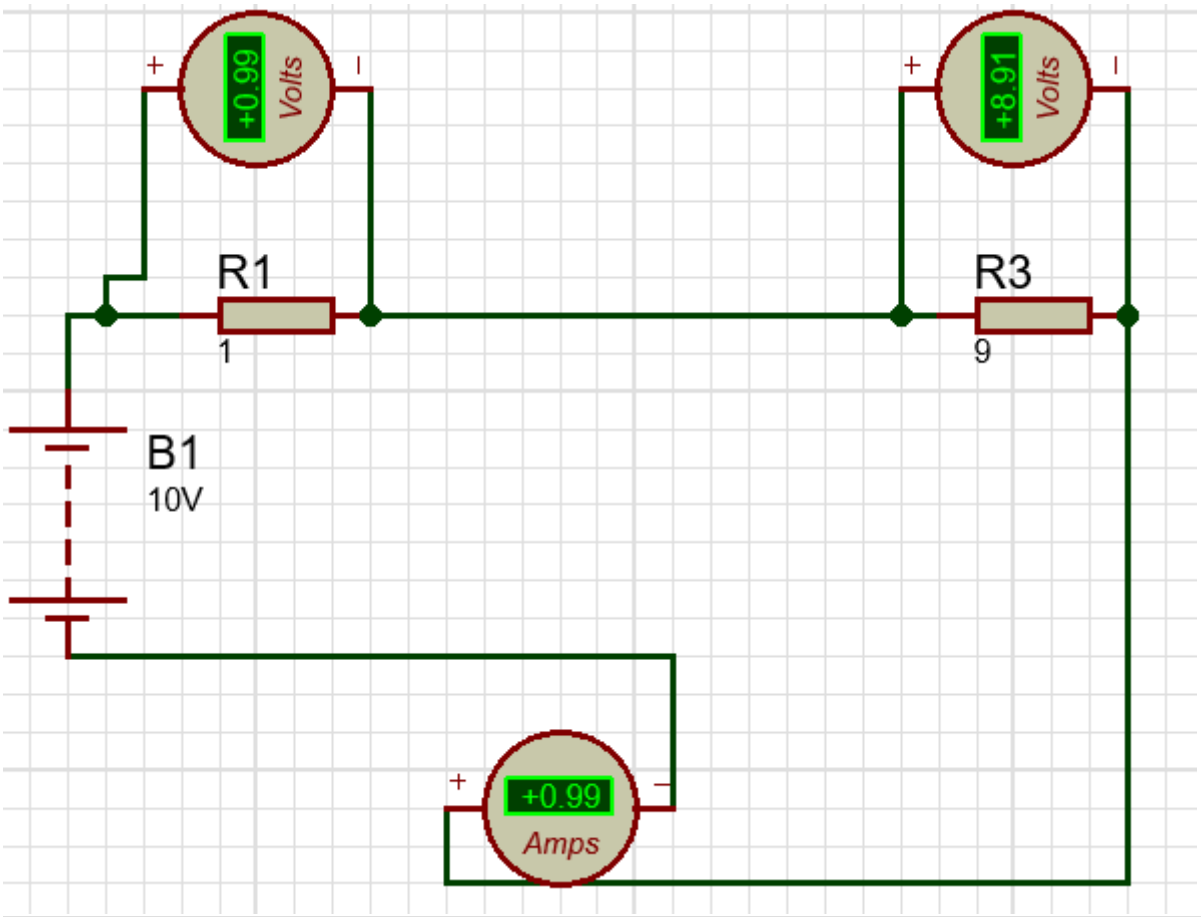
$R_1 = 1\,\Omega$ $R_2 = 0\,\Omega$ (→ 1) $R_3 = 9\,\Omega$ $R_4 = 0\,\Omega$ (→ 1)

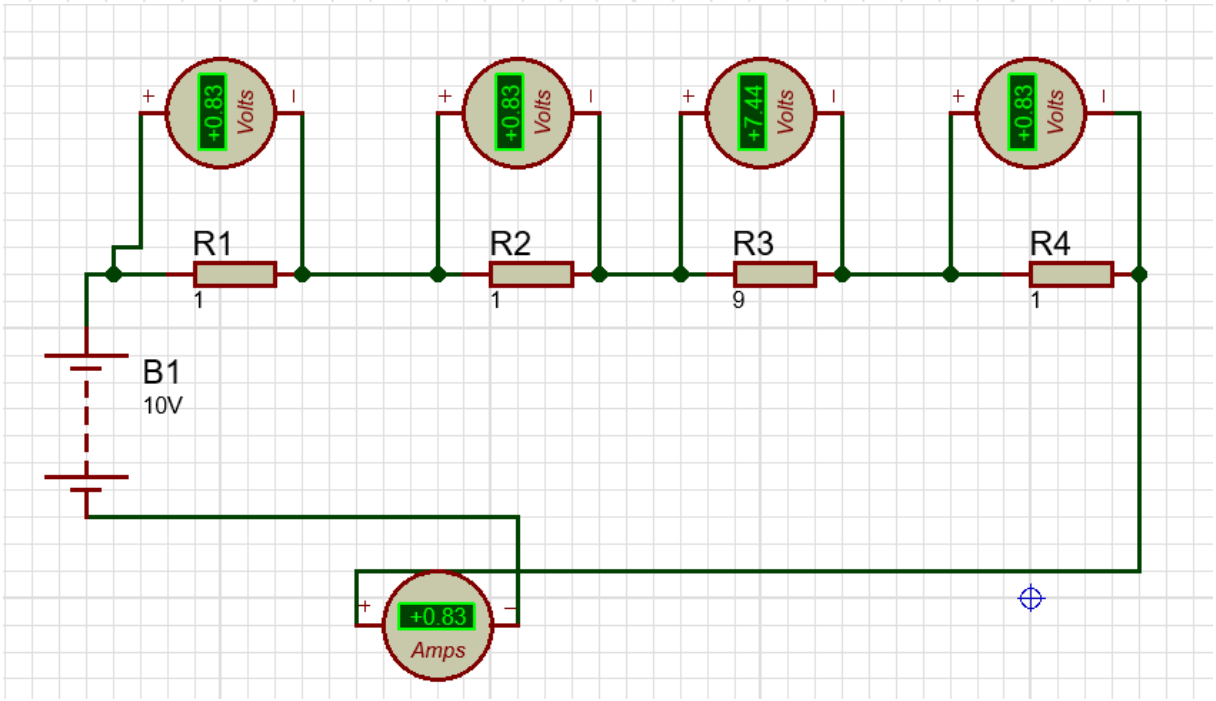
Durumlar	Seri	V	V_1	V_2	V_3	V_4	I_0	I_h	R_{es} h	P W ($V_h \cdot I_h$)
R_4 çıkıyor	R_1, R_2, R_3	10	0,9 V	0,9 V	8,11 V	—	0,9 A	0,71 A	11 Ω	9,1 W
R_2 R_4 çıkıyor	R_1, R_3	10	0,99 V	—	8,91 V	—	0,99 A	1 A	10 Ω	10 W
—	R_1, R_2 R_3, R_4	10	0,833 V	0,833 V	7,44 V	0,833 V	0,833 A	0,833 A	12 Ω	8,33 W

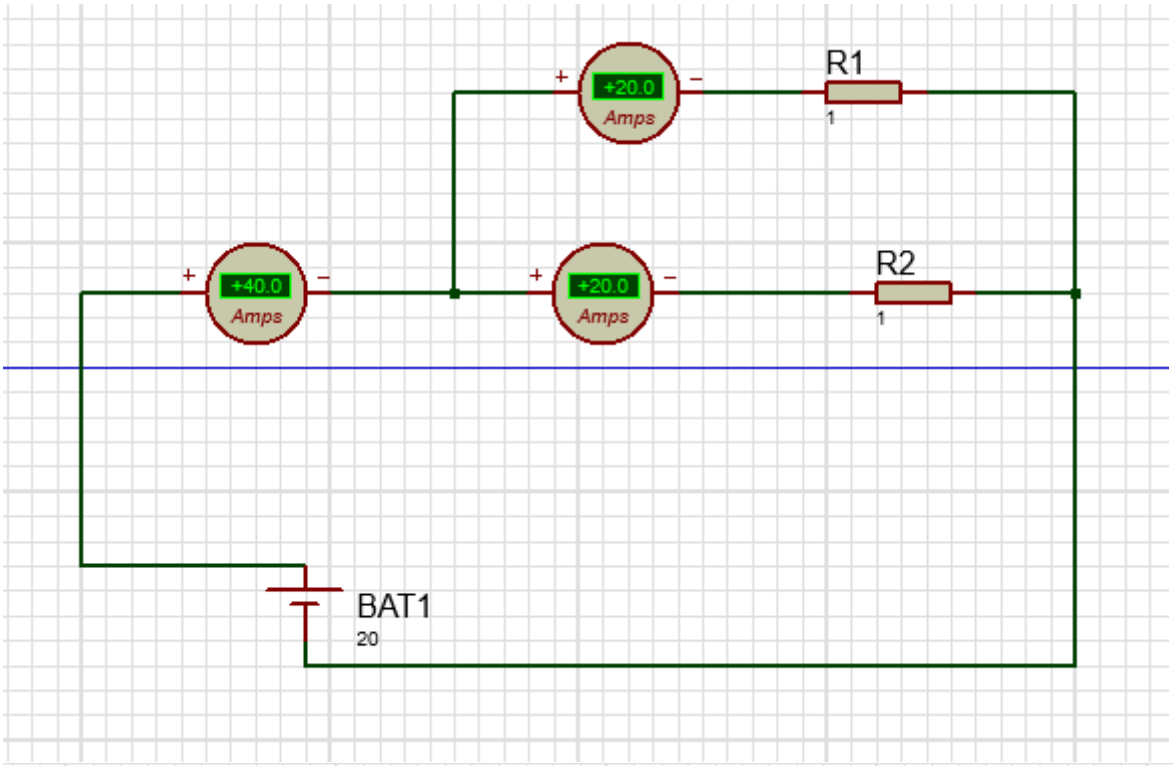
$V = I \cdot R_{es}$ $10 = I \cdot (9+1+1+1)$ $P = V \cdot I = 10 \cdot 0{,}833 = 8{,}33$ W

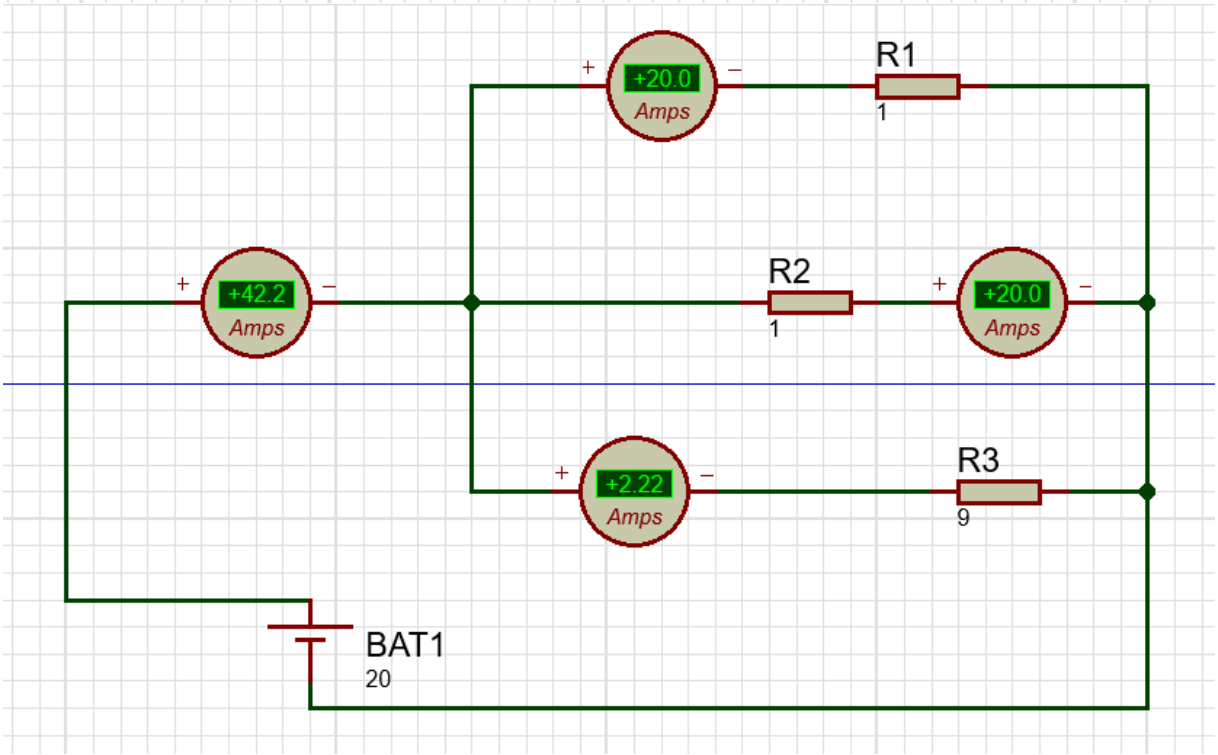
$R_{es} = 9+1+1+1$ $\frac{10}{12} = 0{,}833$ A

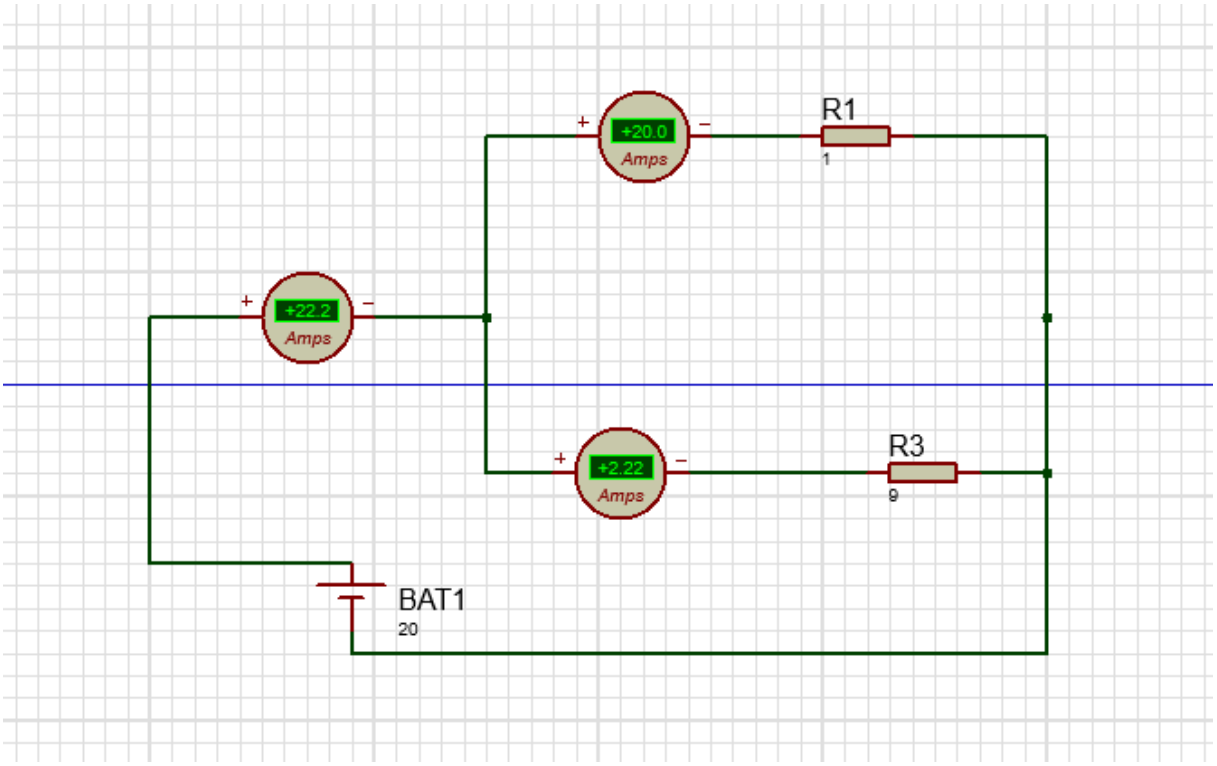



+0.99
Volts
+8.91
Volts
R1
1
R3
9
B1
10V
+0.99
Amps


+0.83
Volts
+0.83
Volts
+7.44
Volts
+0.83
Volts
R1
1
R2
1
R3
9
R4
1
B1
10V
+0.83
Amps


+20.0
Amps
R1
1
+40.0
Amps
+20.0
Amps
R2
1
BAT1
20


+20.0
Amps
R1
1
+42.2
Amps
R2
1
+20.0
Amps
+2.22
Amps
R3
9
BAT1
20


+20.0
Amps
R1
1
+22.2
Amps
+2.22
Amps
R3
9
BAT1
20

$V = I \cdot R_{eq}$ $\quad 10 = I \cdot (1+9)$ $\quad P = I \cdot V = 1 \cdot 10 = 10\ W$

$R_{eq} = 1+9$ $\quad I = 1\ A$

$V = I \cdot R_{eq}$ $\quad 10 = I \cdot 11$ $\quad P = I \cdot V = 0{,}91 \cdot 10 = 9{,}1\ W$

$R_{eq} = 9+1+1 = 11\ \Omega$ $\quad I = 0{,}91$

Son u 2

$R_1 = 1\Omega$ $\quad R_2 = 1\Omega$ $\quad R_3 = 9\Omega$

Durum	Paralel	V	I_1	I_2	I_3	I_0	I_4	Res	P
R_3 çıkışsa	R_1 R_2	20	10 A	10 A	—	20 A	40A	0,5 Ω	800W
R_2 çıkışsa	R_1, R_3	20	10 A	—	2 A	20 A	22,22 A	0,9 Ω	444,4 W
—	$R_1 R_2 R_3$	20	10,5 A	10,5 A	1,23 A	34,1 A	42,22 A	0,473 Ω	844,4 W

$V = I \cdot R_{eq}$ $\quad 20 = I \cdot \frac{9}{19}$ $\quad R_{eq} = 0{,}473\ \Omega$

$R_{eq} = \frac{1}{\frac{1}{1}+\frac{1}{1}+\frac{1}{9}} = \frac{9}{19}$ $\quad I = 42{,}22\ A$ $\quad P = 42{,}22 \cdot 20 = 844{,}4\ W$

$V = I \cdot R_{eq}$ $\quad 20 = I \cdot \frac{9}{10}$ $\quad R_{eq} = 0{,}9\ \Omega$

$R_{eq} = \frac{1}{1+\frac{1}{9}} = \frac{9}{10}$ $\quad I = 22{,}22\ A$ $\quad P = 22{,}22 \cdot 20 = 444{,}4\ W$

$V = I \cdot R_{eq}$ $\quad 20 = I \cdot R$ $\quad P = I \cdot V = 40 \cdot 20 = 800\ W$

$I = 40\ A$

$R_{eq} = \frac{1}{1+1} = \frac{1}{2}$