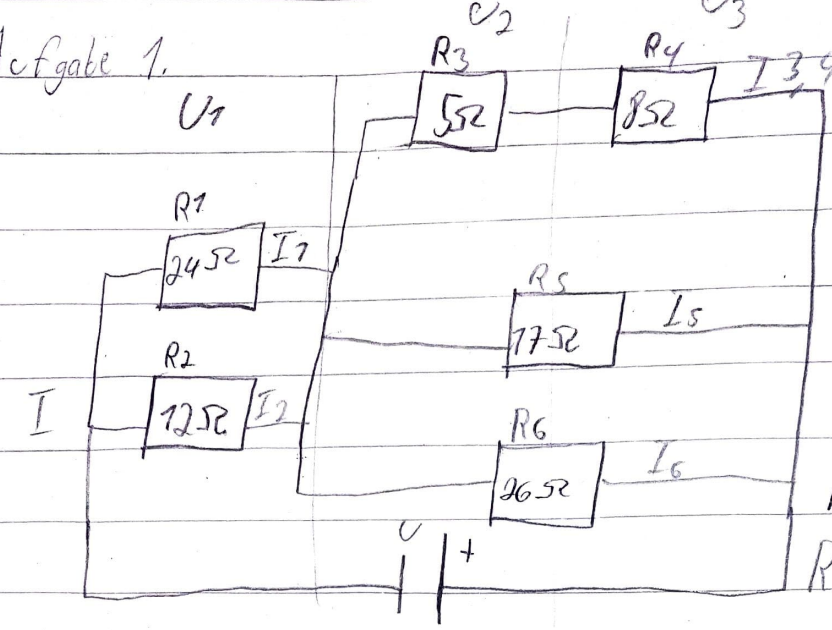
$U = R \cdot I$

$R_3 + R_4 = 13\,\Omega$

Aufgabe 1.




$U = 220\,V$

$R_1 = 24\,\Omega$

$R_2 = 12\,\Omega$

$R_3 = 5\,\Omega$

$R_4 = 8\,\Omega$

$R_5 = 17\,\Omega$

$R_6 = 26\,\Omega$

$I_1 = \frac{U}{R_1} = \frac{220\,V}{24\,\Omega} = I_1 = 9{,}2\,A$

$I_2 = \frac{U}{R_2} = \frac{220\,V}{12\,\Omega} = I_2 = 18{,}3\,A$

$U_1 = 36\,\Omega \cdot 27{,}5 =$

$R = \frac{1}{24} + \frac{1}{12} = \frac{1}{8} = \frac{8}{1} = 8\,\Omega$

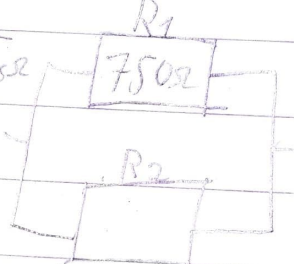
$I_1 + I_2 = 27{,}5\,A$

$U = 8\,\Omega \cdot 27{,}5\,A = 220\,V$

???

Aufgabe 3

$\frac{1}{350\,\Omega} - \frac{1}{750\,\Omega} = \frac{1}{656{,}25\,\Omega}$




$R_g = 350\,\Omega$

$\frac{1}{750\,\Omega} + \frac{1}{656{,}25} = \frac{1}{350}\,\Omega$

8. Aufgabe

geg: - $U = 2,4\,V$
- $I = 0,022\,A$
- $U_{neu} = 10\,V$

ges: a.)
- $R$ - $R_{neu}$

$R = U / I$

$R = 2,4\,V$

$R = 109,1\,\Omega$

$R_{neu} = U_{neu} / 5V$

$R_{neu} = 10V / 0,022\,A$

$R_{neu} = 454,55\,\Omega$

c.)

| | |
|---|---|
| 454,55 | 100% |
| 1 | 0,22% |
| 109,1 | 24% |

100% - 24% = 76%

Verlust 76%

6.

a) $I = 40\,mA = 0{,}04\,A$

$U = 5\,V$

$R?$ $\rightarrow R = \frac{U}{I} = \frac{5}{0{,}04} = 125\,\Omega$

Bsp. LED mit 4V und 1,3mA = 0,013A

$R = \frac{U}{I} = \frac{4}{0{,}013} = 307{,}69\,\Omega$

7) geg: $U = 2{,}2\,V$

$I = 0{,}02\,A$

$U_{neu} = 5\,V$

ges: a.) $-R$

$-R_{neu}$

$R = U/I$ $\qquad R_{neu} = U_{neu} / 5V$

$R = 2{,}2\,V / 0{,}02$ $\qquad R_{neu} = 5V / 0{,}02A$

$R = 110\,\Omega$ $\qquad R_{neu} = 250\,\Omega$

b)

| | |
|---|---|
| 250 | 100% |
| 1 | 0,4 |
| 110 | 44% |

100% - 44% = 56%

Verlust liegt bei 56%