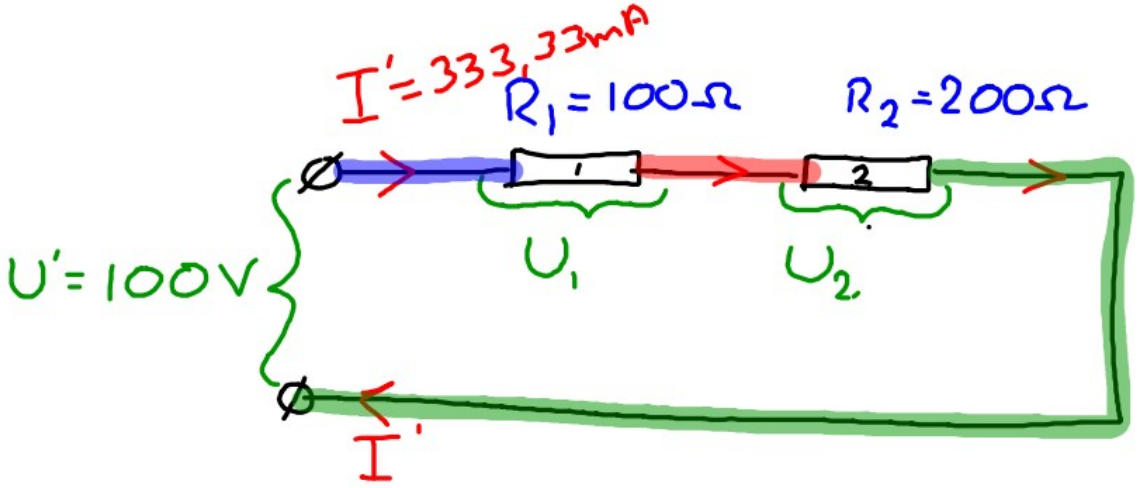
KIRCHHOFF'S LOVE (SERIE-KREDS)



$R' = R_1 + R_2 = 100 + 200 = \underline{300\Omega}$

$I' = \frac{U'}{R'} = \frac{100}{300} = \underline{333,33mA}$

$U_1 = I_1 \times R_1 = 0,33333 \times 100 = \underline{33,33V}$

$U_2 = I_2 \times R_2 = 0,33333 \times 200 = \underline{66,67V}$

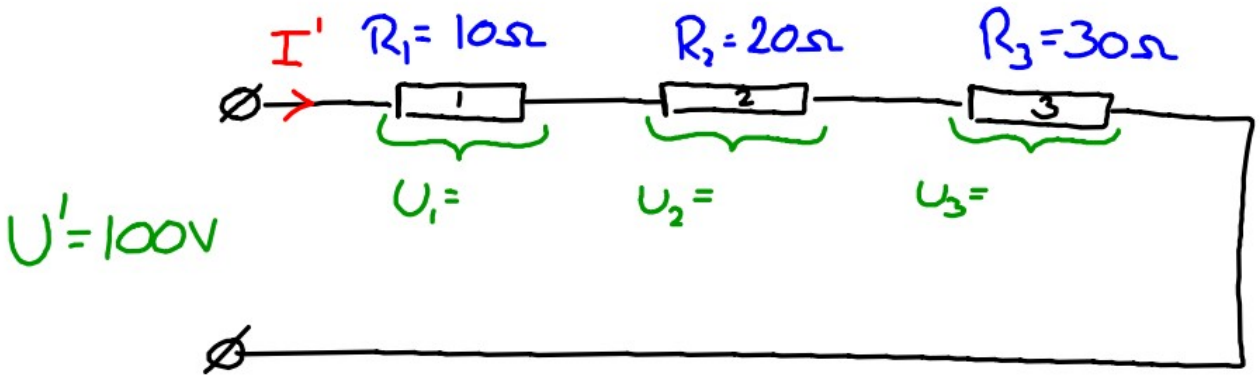
$U_2 = U' - U_1 = 100 - 33,33 = \underline{66,67V}$

$U' = U_1 + U_2$ $\quad I' = I_1 = I_2$ $\quad R' = R_1 + R_2$

Lov #2

"SUMMEN AF SPÆNDINGSFALD, ER LIG' MED DEN PÅTRYGTE SPÆNDING"

EKSEMPEL



$$I' = I_1 = I_2 = I_3$$

$$U' = U_1 + U_2 + U_3$$

$$R' = R_1 + R_2 + R_3$$

① $R' = R_1 + R_2 + R_3 = 10 + 20 + 30 = \underline{60\Omega}$

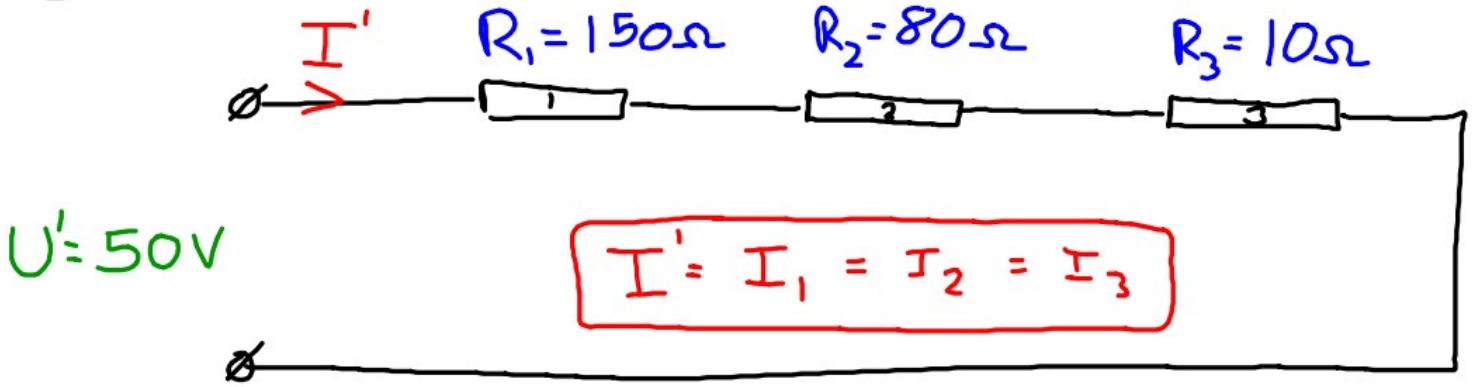
② $I' = \frac{U'}{R'} = \frac{100}{60} = \underline{1{,}67A}$

③ $U_1 = I_1 \times R_1 = 1{,}67 \times 10 = \underline{16{,}67V}$

④ $U_2 = I_2 \times R_2 = 1{,}67 \times 20 = \underline{33{,}33V}$

⑤ $U_3 = I_3 \times R_3 = 1{,}67 \times 30 = \underline{50V}$

MATRIKS



	U	I	R
1	31,25V		150Ω
2	16,67V		80Ω
3	2,08V		10Ω
Tot	50V	208,33 mA	240Ω

$R' = R_1 + R_2 + R_3 = 150 + 80 + 10 = \underline{240\Omega}$

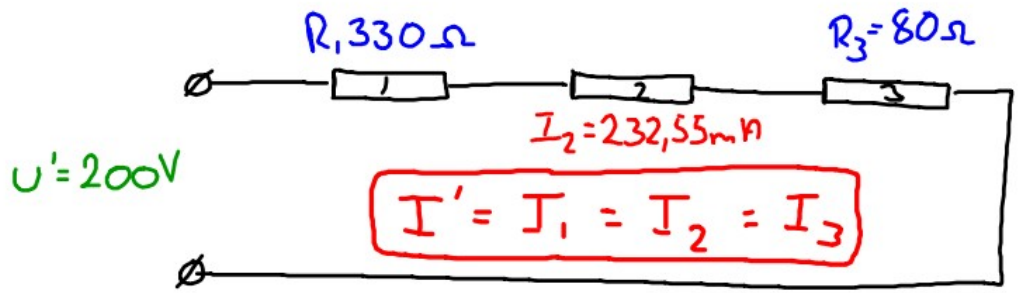
$I' = \frac{U'}{R'} = \frac{50}{240} = \underline{208,\overline{33}\,mA}$

$U_1 = I_1 \times R_1 = 0,20\overline{833} \times 150 = \underline{31,25V}$

$U_2 = I_2 \times R_2 = 0,20\overline{833} \times 80 = \underline{16,67V}$

$U_3 = I_3 \times R_3 = 0,20\overline{833} \times 10 = \underline{2,08V}$

Fuck ... Hvad nu?



Der er to måder at løse den på!

	U		I	R
1	1	3	-"-	330Ω
2	3	4	232,55mA	2
3	2	5	-"-	80Ω
Tot	200V		-"-	1

$$R' = \frac{U'}{I'} = \frac{200}{0{,}23255} = 860{,}03\,\Omega$$

$$R_2 = R' - R_1 - R_3 = 450{,}03\,\Omega$$

U_1 $I_x \times R_x$ = 76,74V

U_2 = 104,65

U_3 = 18,6V

$U_1 = I_1 \times R_1 = 0{,}23255 \times 330 = 76{,}74V$

U_3 -"- = 18,6V

$U_2 = U' - U_1 - U_3 = 200 - 76{,}74 - 18{,}6 = 104{,}65V$

$R_2 = \frac{U_2}{I_1}$ 450,03Ω

$R' = R_1 + R_2 + R_3$ 860,08Ω