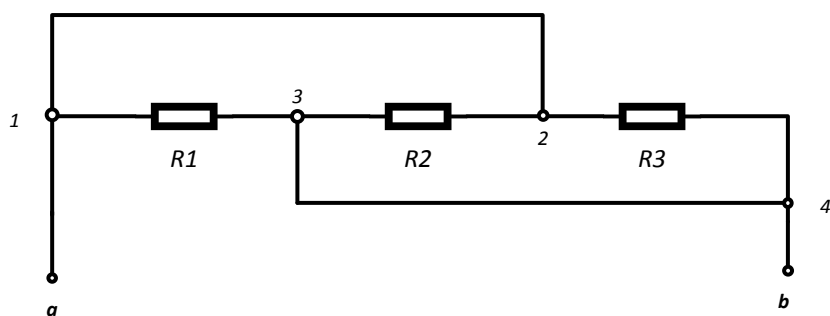
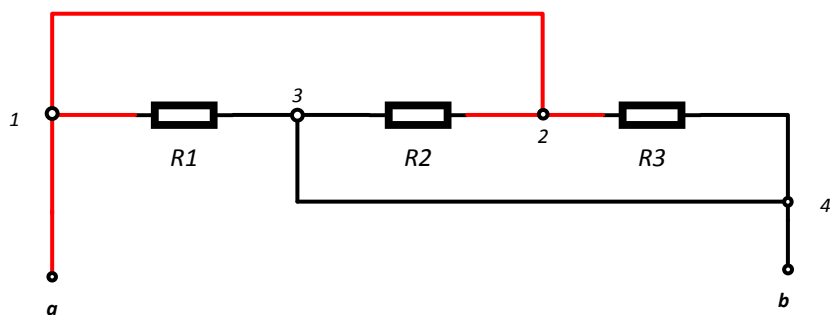


## Pojednostavljanje spojeva otpornika

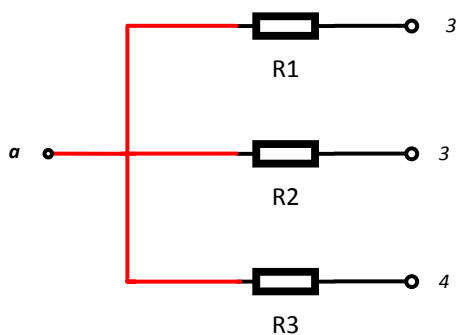
Primjer 1:



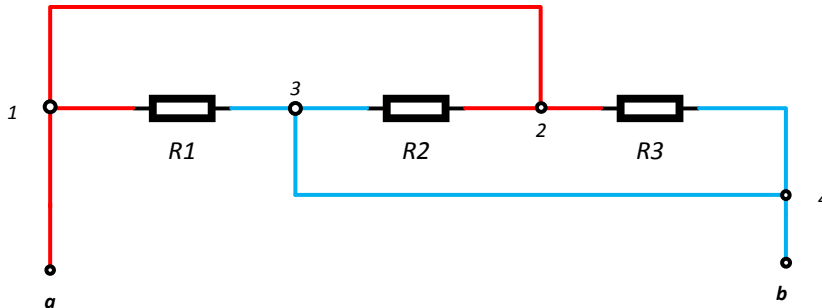
Krećemo od točke  $a$  po pojedinim linijama (žicama) sve dok ne naiđemo na otpornik. Na shemi ispod je to označeno crvenom bojom. Sve crvene linije su ISTA TOČKA, odnosno točka istog potencijala. Dakle točke  $a$ , 1 i 2 su iste točke.



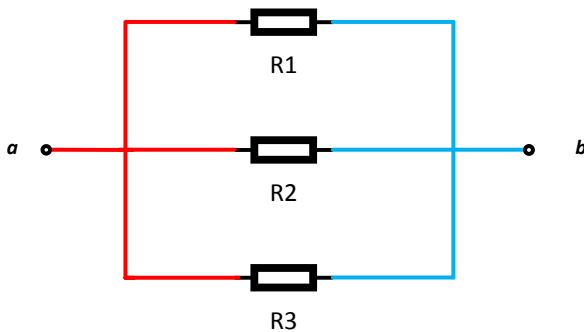
Zaključujemo da svi otpornici počinju u istoj točki. To i nacrtamo:



Sada gledamo što se nalazi nakon svakog otpornika (na krajevima otpornika). Nakon R1 dolazimo u točku 3, a nakon otpornika R2 također u točku 3. Nakon otpornika R3 dolazimo u točku 4. Kako se između točke 3 i 4 ne nalazi otpornik zaključujemo da je to ista točka (točka istog potencijala) – plava boja.



Očigledno je da su svi krajevi otpornika spojeni u istu točku, te to nacrtamo:



Shema je raspetljana te je ukupni otpor:

$$R1 = 1 \, \Omega$$

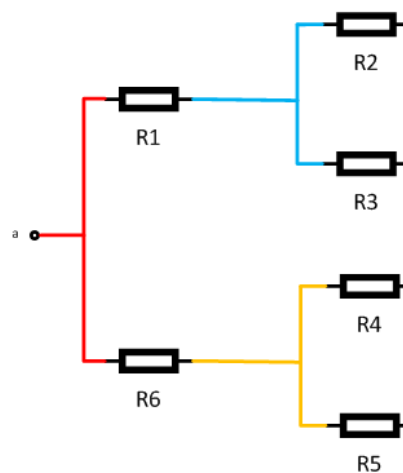
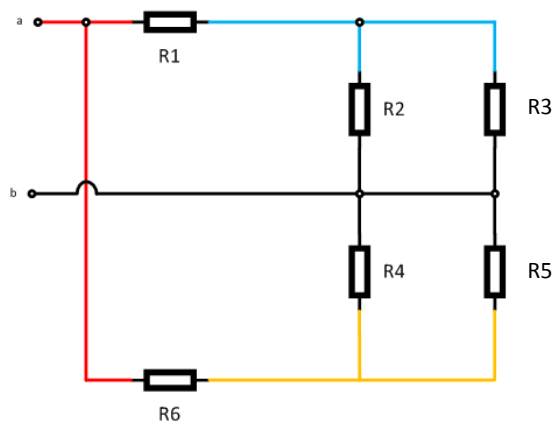
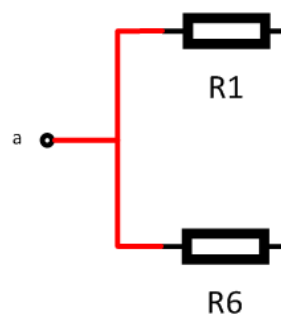
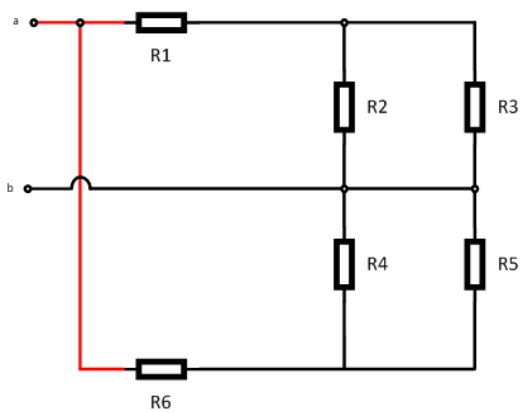
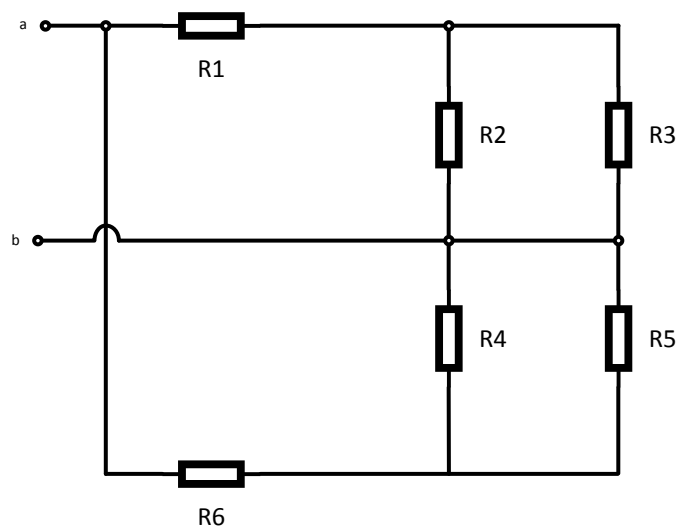
$$R2 = 1 \, \Omega$$

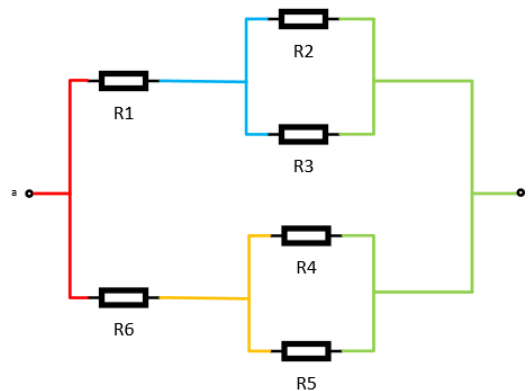
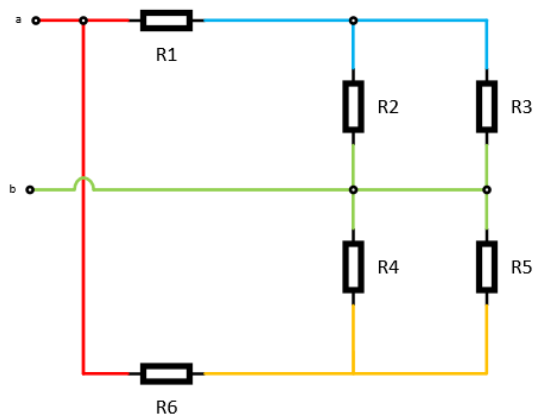
$$R3 = 1 \, \Omega$$

$$R_{uk} = R1 \parallel R2 \parallel R3 = \frac{1}{3} \, \Omega$$

- $\parallel$  je oznaka za paralelni spoj.
- Otpor paralelnog spoja se računa prema:  $\frac{1}{R_{uk}} = \frac{1}{R_1} + \frac{1}{R_2} + \dots + \frac{1}{R_n}$
- Na identičan način se “raspetljavaju” spojevi s kondenzatorima

Primjer 2:



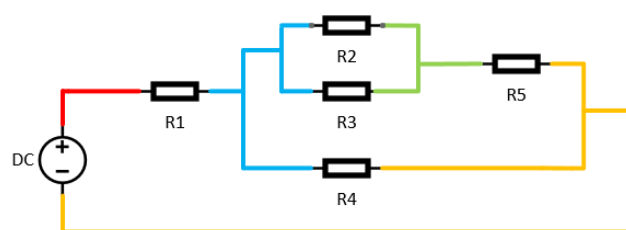
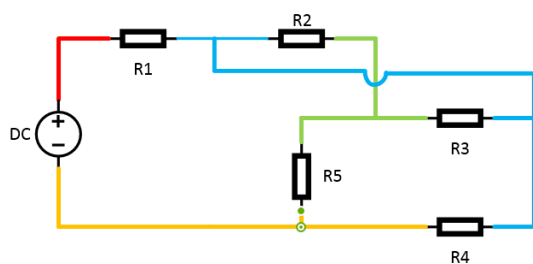
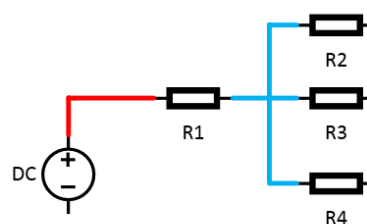
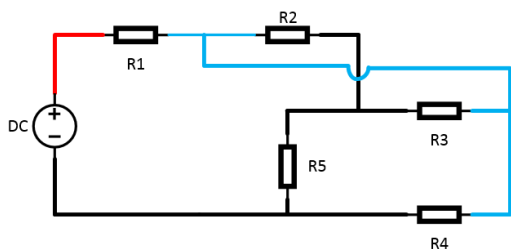
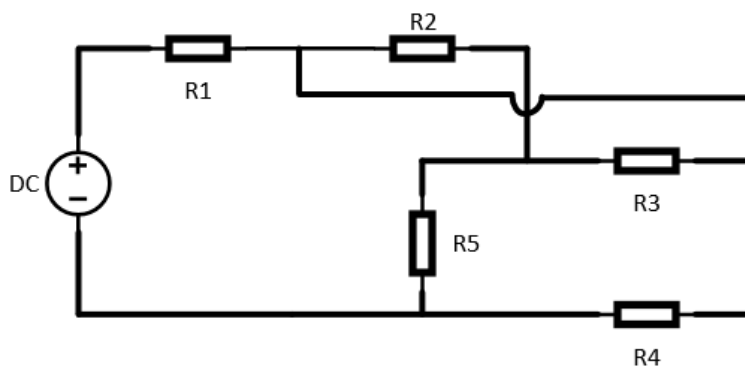


Računanje ukupno otpora: svi otpornici su od  $1 \Omega$ .

$$R_{uk} = (R1 + R2 || R3) || (R6 + R4 || R5)$$

$$R_{uk} = (1 + 0,5) || (1 + 0,5) = 0,75 \Omega$$

Primjer 3:



Računanje ukupnog otpora: svi otpornici su od  $1\ \Omega$ .

$$R_{uk} = R1 + ((R2 \parallel R3 + R5) \parallel R4)$$

$$R_{uk} = 1 + (0,5 \parallel 1) \parallel (1)$$

$$R_{uk} = 1 + 1,5 \parallel 1 = 1,6\ \Omega$$