# Combinational circuits.

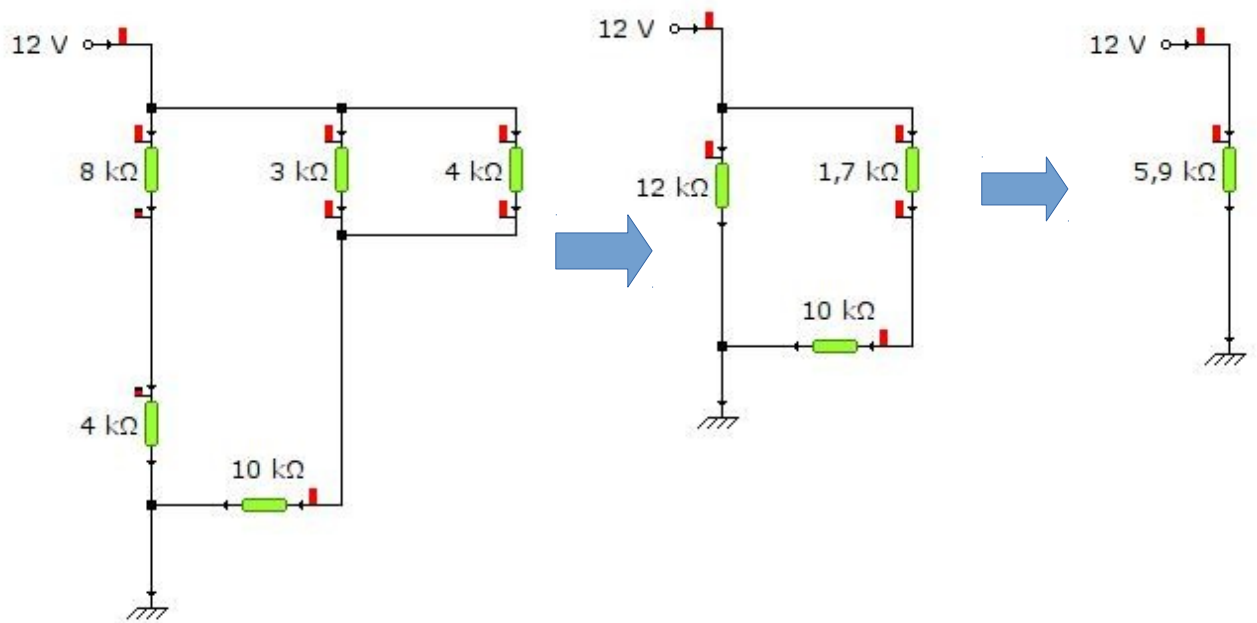How to calculate the equivalent resistance?. And then, current and power.

**Example 1**
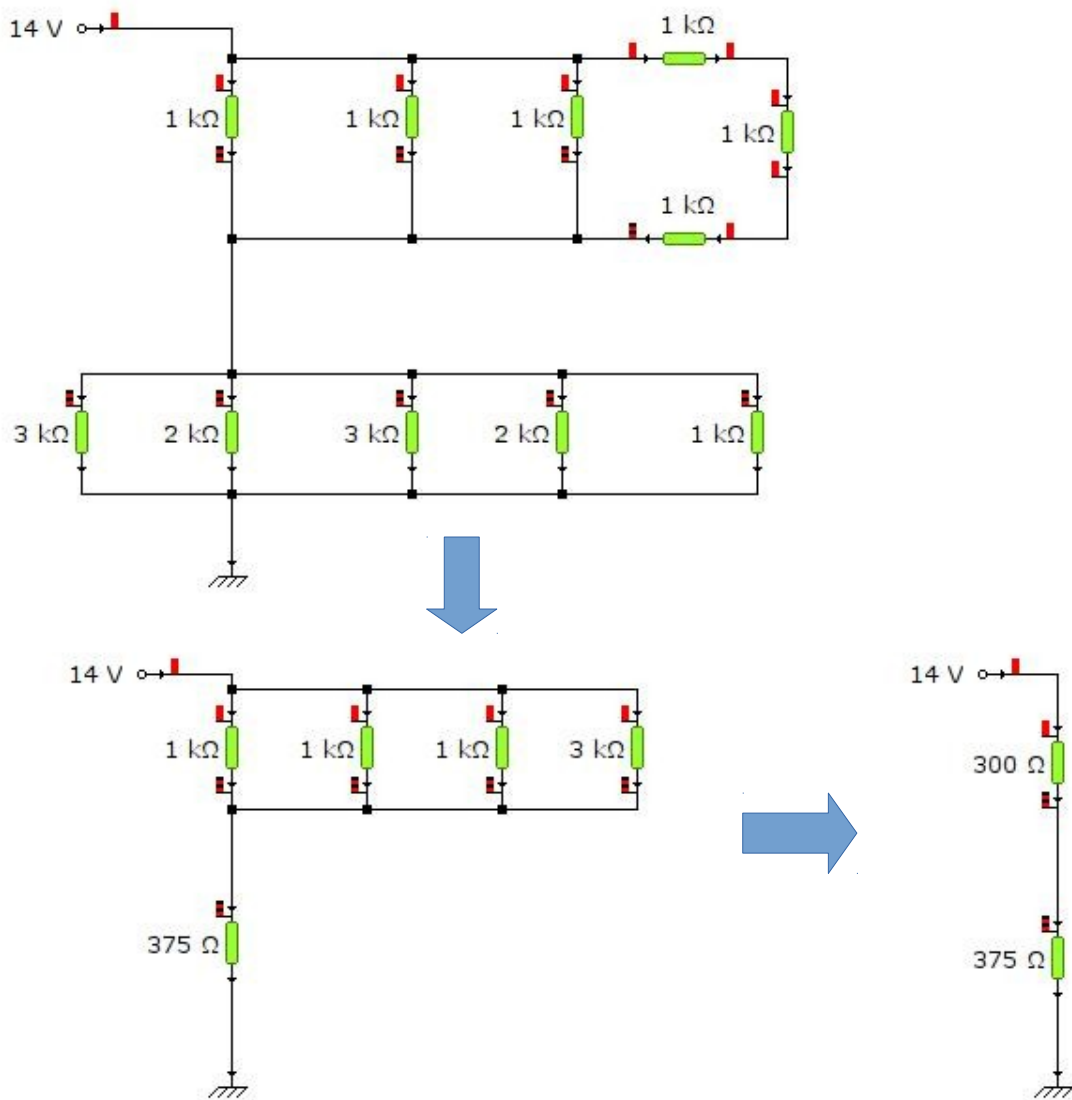
9 V

2 kΩ

3 kΩ

5 kΩ

9 kΩ

9 V

3 kΩ     7 kΩ

9 kΩ

9 V

2,1 kΩ

9 kΩ
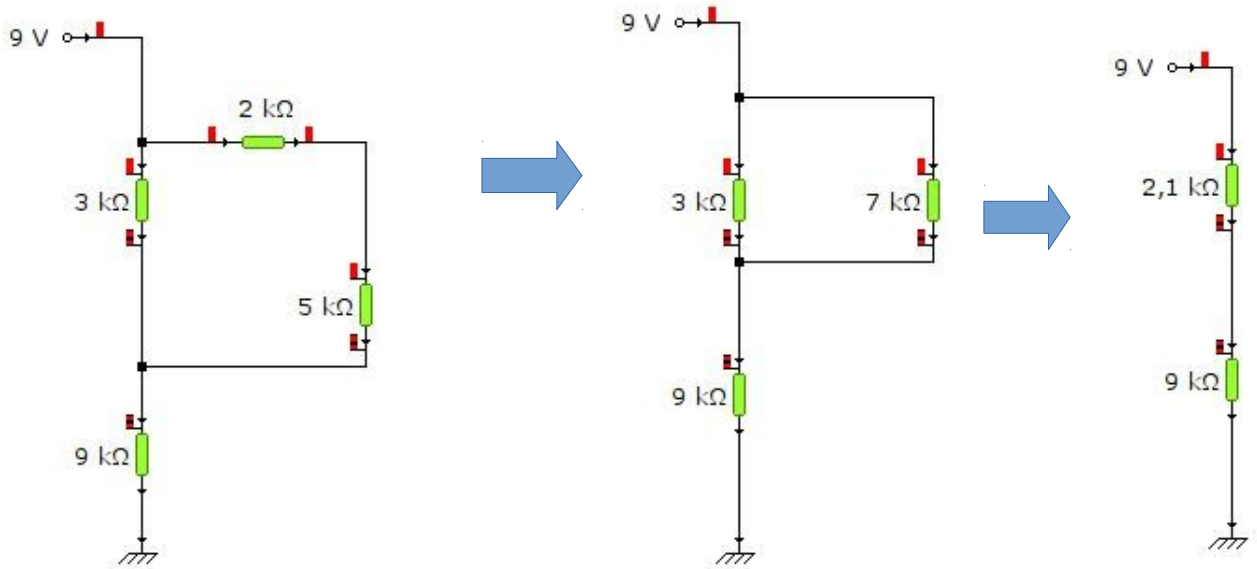
$$I = \frac{V}{R} = \frac{9\,V}{11,1\,k\,\Omega} = 0,81\,mA \quad P = VI = 9V\ 0,81mA = 7,29mW$$

**Example 2**

12 V

8 kΩ     3 kΩ     4 kΩ

4 kΩ

10 kΩ

12 V

12 kΩ     1,7 kΩ

10 kΩ

12 V

5,9 kΩ
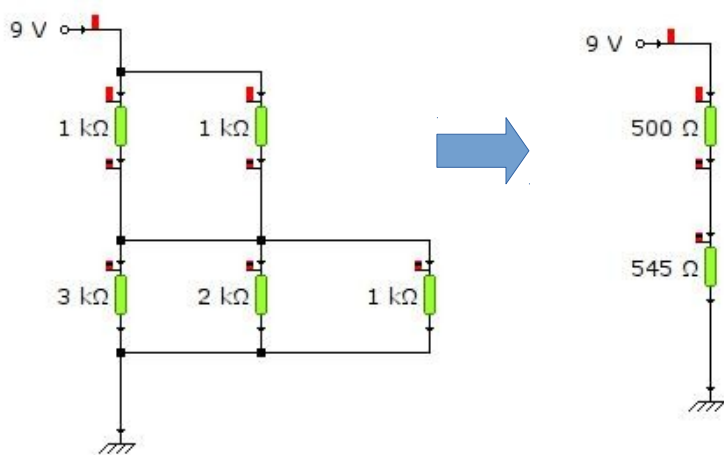
$$I = \frac{V}{R} = \frac{12\,V}{5,9\,k\,\Omega} = 2,03\,mA \quad P = VI = 12V\ 2,03mA = 24,36mW$$

## Example 3



$$I = \frac{v}{R} = \frac{14\,V}{675\,\Omega} = 20{,}74\ mA \quad P = VI = 14V\ 20{,}74\text{mA} = 290{,}37\text{mW}$$

## Example 4



$$I = \frac{V}{R} = \frac{9\,V}{1045\,\Omega} = 8{,}6\ mA$$

$$P = VI = 9V\ 8{,}6\text{mA} = 77{,}4\text{mW}$$