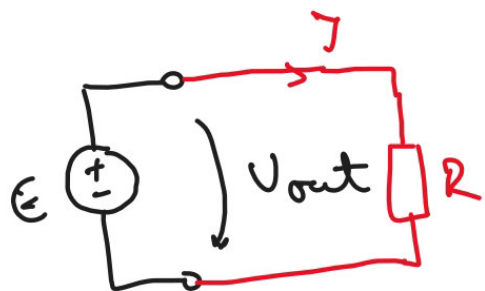


Laborator 1 electronica I

Sursa de tensiune:



ideală $U_{out} = \text{const.}$

indiferent de R

$$I_{out} = 0 \rightarrow \infty$$

$$E = 12 \text{ V} \quad U_{out} = \text{const.} = \underline{12 \text{ V}}$$

$$a) R = 1 \text{ k}\Omega, \quad I = \frac{12 \text{ V}}{1000 \Omega} = 12 \text{ }\mu\text{A}$$

$$b) R = 10 \Omega, \quad I = \frac{12 \text{ V}}{10 \Omega} = 1,2 \text{ A}$$

$$c) R = 1 \Omega, \quad I = \frac{12 \text{ V}}{1 \Omega} = 12 \text{ A}$$

$$d) R = 0,1 \Omega, \quad I = \frac{12 \text{ V}}{0,1 \Omega} = 120 \text{ A}$$

Sursă de tensiune reală:

$I_{out} \rightarrow$ limitat

Sursă reală de tensiune

$$I_{out}^{\text{max}} = \underline{3 \text{ A}}$$

$$E = 12 \text{ V}$$

$$a) R = 1 \text{ k}\Omega, \quad I = \frac{12 \text{ V}}{1000 \Omega} = \underline{12 \text{ }\mu\text{A}}$$

$$b) R = 10 \Omega, \quad I = \frac{12 \text{ V}}{10 \Omega} = 1,2 \text{ A}$$

$$c) R = 1 \Omega, \quad I = \frac{12 \text{ V}}{1 \Omega} = \underline{12 \text{ A} !!!}$$

In realitate $I_{out} = I_{out}^{\text{max}} = \underline{3 \text{ A}}$

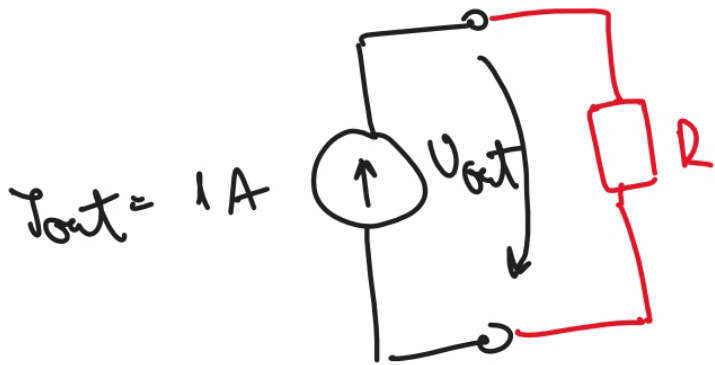
$$I_{out} = 3 \text{ A}$$

$$U_{out} = I \cdot R = \underline{3 \text{ V}}$$

Sursa de curent:

$I_{out} = \text{const.}$ indiferent de R

ideal, $U_{out} = 0 \rightarrow \infty$



a) $R = 0,1 \Omega$, $U_{out} = 0,1 \Omega \cdot 1A = 0,1V$

b) $R = 1 \Omega$, $U_{out} = 1 \Omega \cdot 1A = 1V$

c) $R = 10 \Omega$, $U_{out} = 10 \Omega \cdot 1A = 10V$

d) $R = 1k \Omega$, $U_{out} = 1000 \Omega \cdot 1A = \underline{\underline{1000V}}$

În realitate $U_{out} \rightarrow$ limitat.

Sursă reală: $I_{out} = 1A$, $U_{out} = \underline{\underline{10V}}^{\text{max}}$

$R = 1k \Omega$, $U_{out}^{\text{real}} = 10V$, $I_{out} = \frac{10V}{1k \Omega} =$

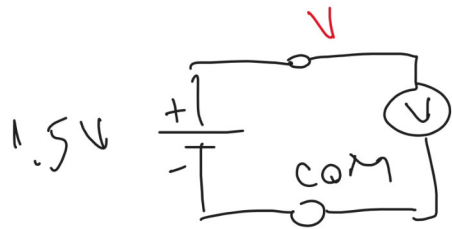
$= \frac{10}{1000} = 0,01A = 10mA$

Tensiune negativă:



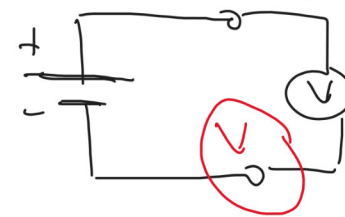
$$U_{\text{măș}} = V_{\downarrow} - V_{\text{COM}} = V_1 - V_2$$

conexiunea 1

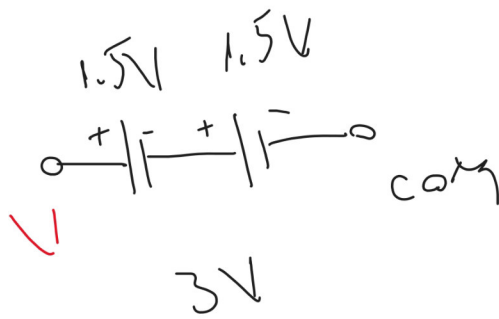


$$U_{\text{măș}} = 1.5V$$

conexiunea 2

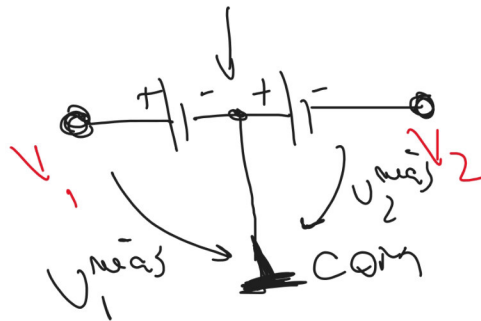


$$U_{\text{măș}} = -1.5V$$



$$V_{\text{ref}} = \perp \neq \perp \text{ (earth)}$$

$$V = 0$$



$$U_{\text{măș}1} = 1.5 - 0 = 1.5V$$

$$U_{\text{măș}2} = -1.5 - 0 = -1.5V$$

