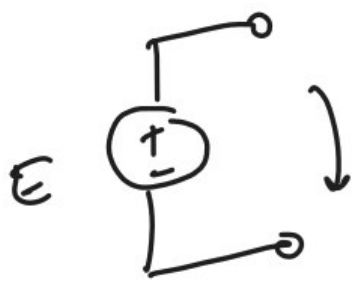
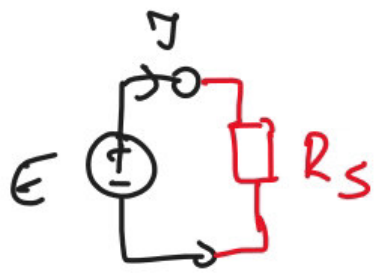
# Lab electronică I:

## Sursa de tensiune:




$E = R_S \cdot I$

$E = 10V$

$R_S = 1k\Omega$

$I = \frac{E}{R_S} = \frac{10V}{1k\Omega}$

$= \frac{10V}{1000\Omega} = 0.01A =$

$= 10mA$

$R_S = 1\Omega \quad I = 10A$

$R_S = 0.1\Omega \quad I = 100A$

$R_S = 0.01\Omega \quad I = 1000A$

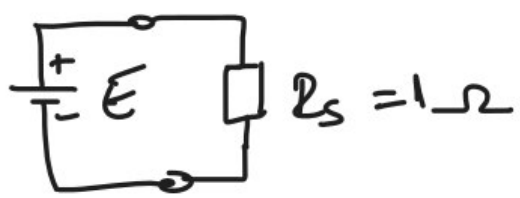
Sursă de tensiune REALĂ — IDEALĂ

$I \to I_{max} = finit \quad I_{max} \to \infty$

$I_{max} = 0.1A$

$E = 10V$

$R_S = 1\Omega$



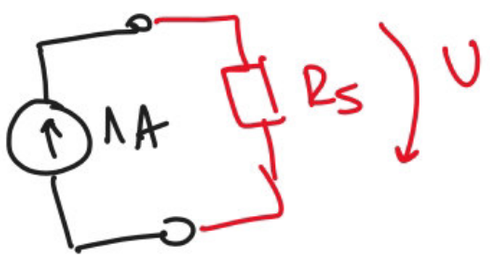

ideal $I = \frac{E}{R_S} = \frac{10V}{1\Omega} = 10A$ !!!

$I_{real}^{max} = 0.1A$

$E = R_S \cdot I_{real}^{max} = 1 \cdot 0.1A = 0.1V.$

# Sursa de curent:

IDEALĂ $I_{out} = const.$




$U = R_S \cdot I$

$R_S = 1\,\Omega$

$U = 1\,\Omega \cdot 1A = 1V$

$R_S = 1k\Omega$

$U = 1k\Omega \cdot 1A = 1000\,\Omega \cdot 1A = 1000V$

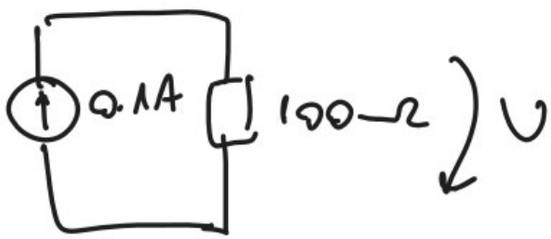
Sursă de curent reală:

$U_{max}$

$I = 0.1A$

$U_{max} = 30V$

$R_S = 100\,\Omega$




$U = 0.1A \cdot 100\,\Omega = 10V$

ideal

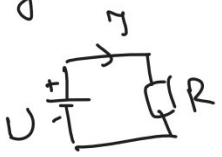
$U = 0.1A \cdot 1000\,\Omega = 100V$ !

$R_S = 1k\Omega = 1000\,\Omega$

$U_{out} = U_{out}^{max} = 30V$

$I = \frac{30V}{1000\,\Omega} = 0.03A = 30mA$

Legea lui Ohm




$U = R \cdot I$.

Kirchhoff:

pt. curenți:

$\sum I_{in} = \sum I_{out}$

pt. tensiuni:


$\sum u_k = 0$.

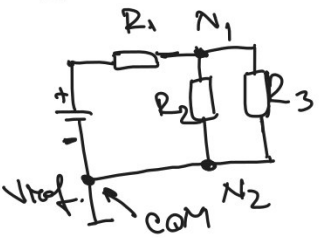
## Potențial de referință (masă, comun):

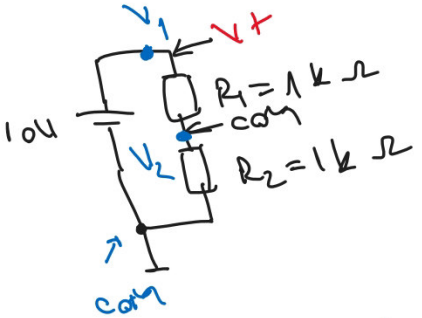
$\perp \neq \downarrow$ EARTH.

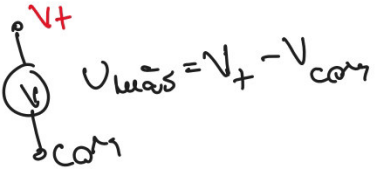
(-)

(+)


$U = V_1 - V_2 = 1.5V$




$U_{măs} = V_+ - V_{com}$

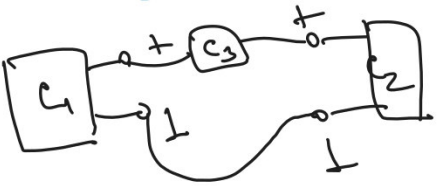
$U_1 = V_1 - V_{com}$

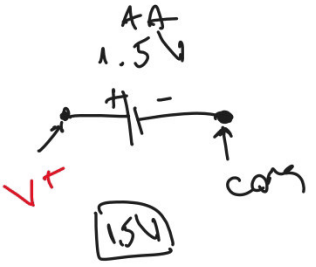
$U_2 = V_2 - V_{com}$

$U_R = U_1 - U_2 =$

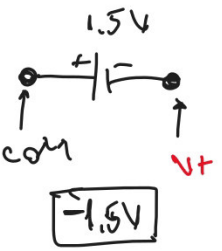
$= V_1 - \cancel{V_{com}} - V_2 + \cancel{V_{com}}$

$= V_1 - V_2$

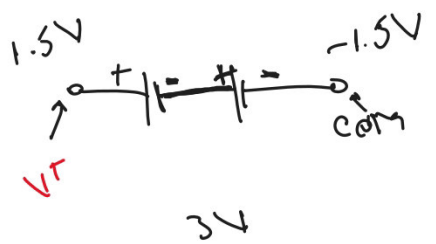



1.5V




-1.5V




3V