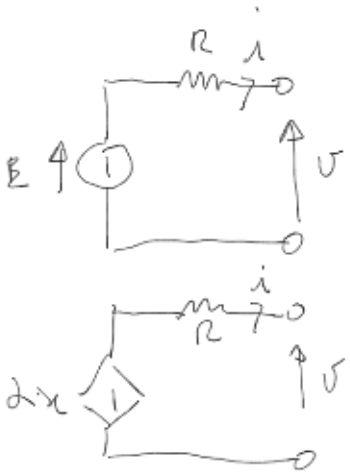
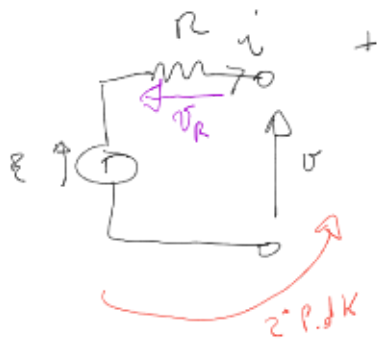
Lezione 10

MODELLO DI THEVENIN (LATO THEVENIN)



BIPOLO (LATO) COMPOSTO DALLA SERIE DI UN RESISTORE CON UN GEN. IDEALE INDIP (O CONTROLLATO) DI TENSIONE

LEGGE COSTITUTIVA

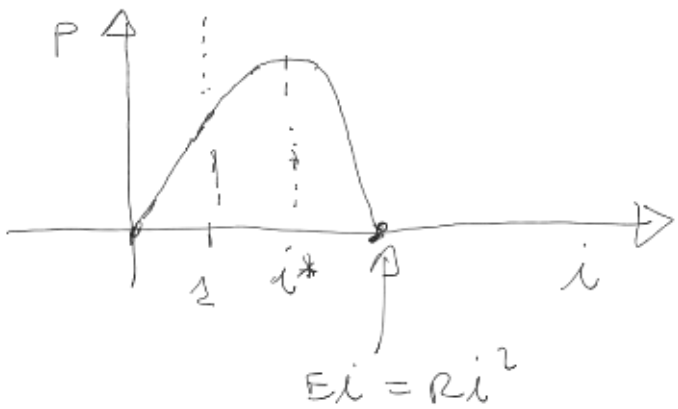


$$+v+v_R-E=0$$

$$\boxed{v=E-Ri}$$

POTENZA

$$P=v\cdot i=(E-Ri)i=Ei-Ri^2$$



$$P(i^*)=P_{max}$$

DUNQUE IL MODELLO DI THEVENIN RAPPRESENTA ANCHE UN GENERATORE DI TENSIONE REALE

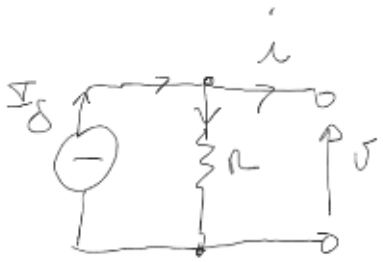
MODELLO DI NORTON (LATO NORTON)

THEVENIN $\rightarrow$ $v = E - Ri$ $\quad (v = f(i))$

$i = g(v) \Rightarrow Ri = E - v$

$$i = \frac{E}{R} - \frac{v}{R} = I_g - \frac{v}{R}$$

1° P.d.K $\quad I_g - \frac{v}{R} - i = 0$

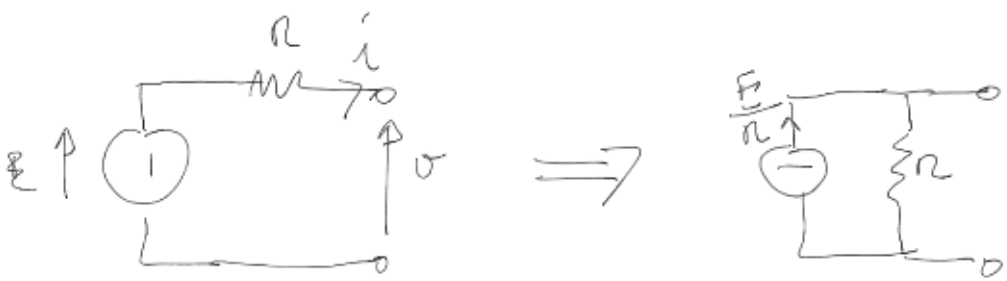


LATO NORTON

$$\boxed{i = \frac{E}{R} - \frac{v}{R}}$$

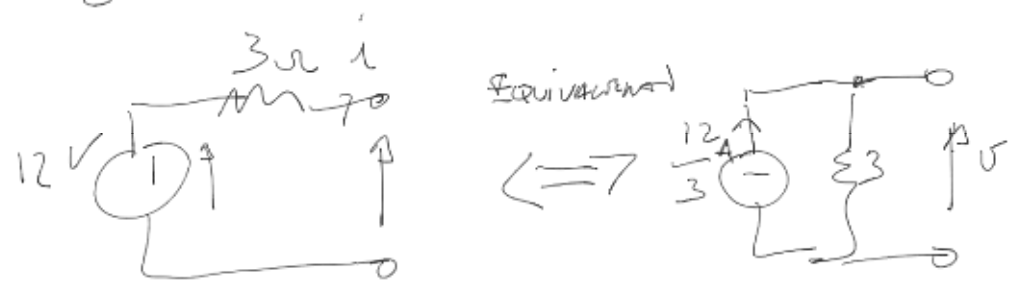
$\frac{v}{R} = Gv$ 

PASSAGGIO MODELLI THEVENIN - NORTON



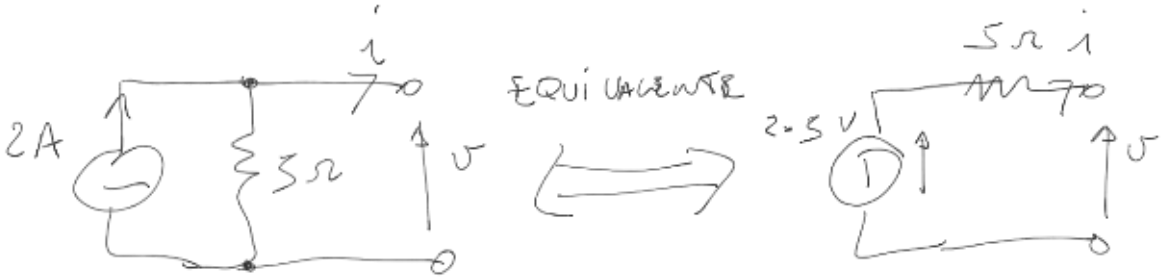
$$I_g = \frac{E}{R}$$

ESEMPIO

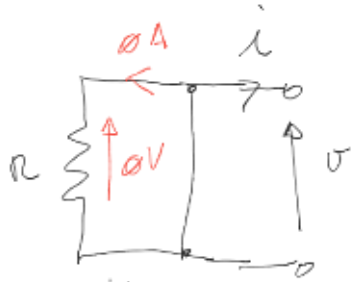


$$E = I_g R$$

ESEMPIO



ALTRI MODELLI EQUIVALENTI



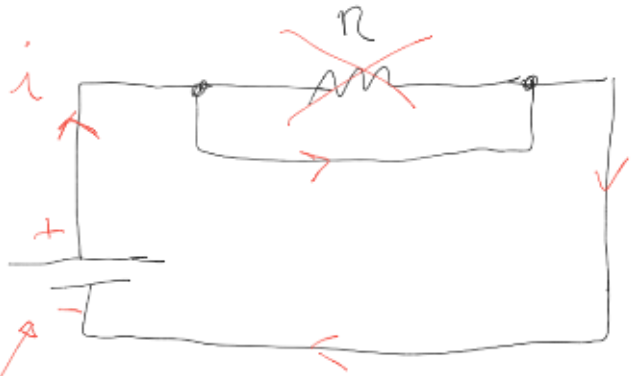
PARALLELO TRA RESISTORE E CORTOCIRCUITO

C.C $\Rightarrow$ $v = 0\,V$

quindi ai capi di R c'è una tensione nulla

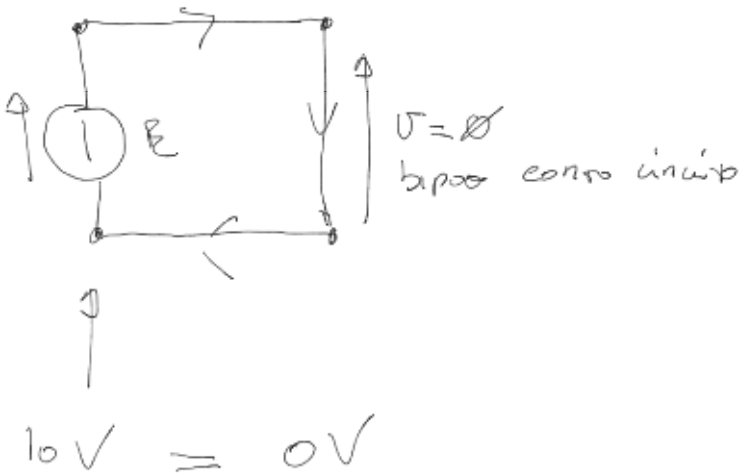
siccome $v = Ri \Rightarrow i = 0$

DOVE È L'ERRORE SULLA FELPA ?



GEN IDEALE IN DIP DI TENSIONE COSTANTE

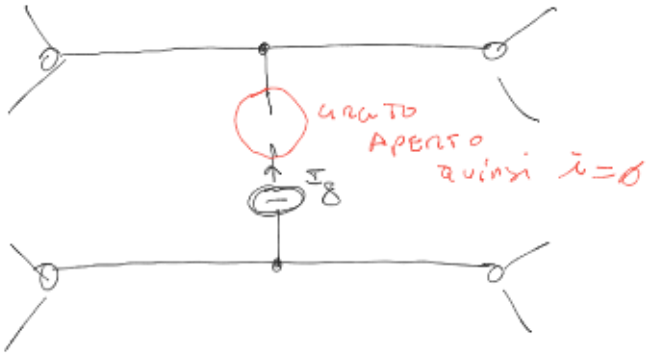
IL SEGMENTO PIU LUNGO CORRISPONDE ALLA PUNTA DELLA FRECCIA



IN GENERALE QUINDI :

NON HA SENSO MATEMATICO SE $E \neq 0\,V$

IL DUALE $\bar{E}$:



NON HA SENSO MATEMATICO SE $I_g \neq 0\,A$