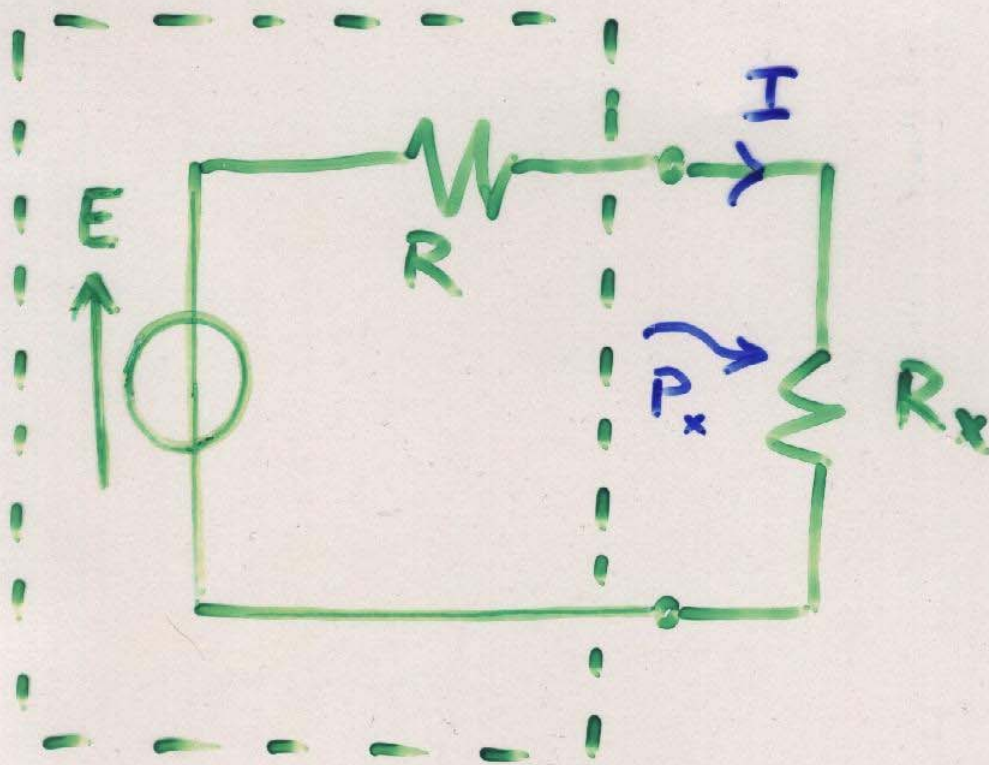
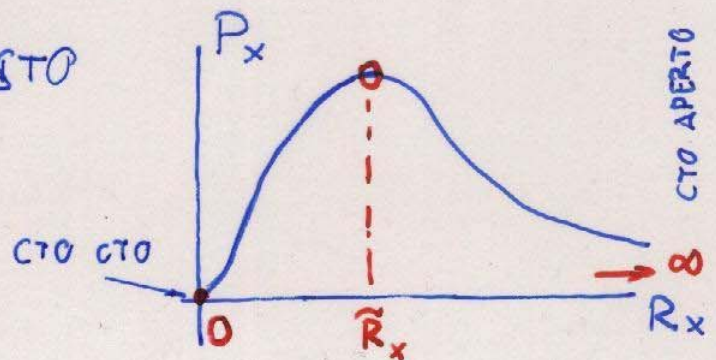


TEOREMA DEL MASSIMO TRASFERIMENTO DI POTENZA



R_x tale che P_x sia massima?

IL PRBL È BEN POSTO



$$I = \frac{E}{R + R_x}$$

$$P_x = R_x \frac{E^2}{(R + R_x)^2} = P_x(R_x)$$

$$\frac{\partial P_x}{\partial R_x} = \frac{E^2}{(R + R_x)^2} - 2R_x \frac{E^2}{(R + R_x)^3} =$$

$$= \frac{R - R_x}{(R + R_x)^3} E^2 \equiv 0$$

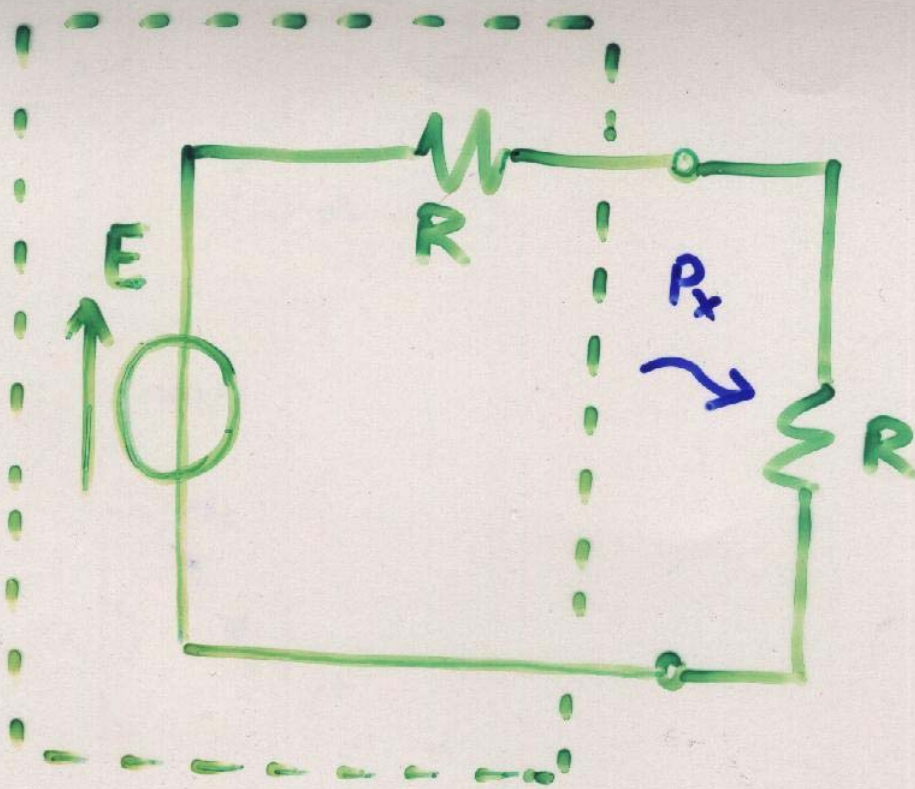
$$\Rightarrow R_x = R$$

P_x è stazionaria

$$\frac{\partial^2 P_x}{\partial R_x^2} = - \frac{3RE^2}{(R+R_x)^4} - \frac{E^2}{(R+R_x)^3} + \frac{3R_x}{(R+R_x)^4} E^2$$

$$\left. \frac{\partial^2 P_x}{\partial R_x^2} \right|_{R_x=R} = - \frac{3}{16} \frac{E^2}{R^3} - \frac{1}{8} \frac{E^2}{R^3} + \frac{3}{16} \frac{E^2}{R^3} < 0$$

$\Rightarrow R_x = R$
 P_x è massima



$$P_x = R \frac{E^2}{(2R)^2} = \frac{E^2}{4R}$$

valore massimo di P_x

≡ POTENZA DISPONIBILE