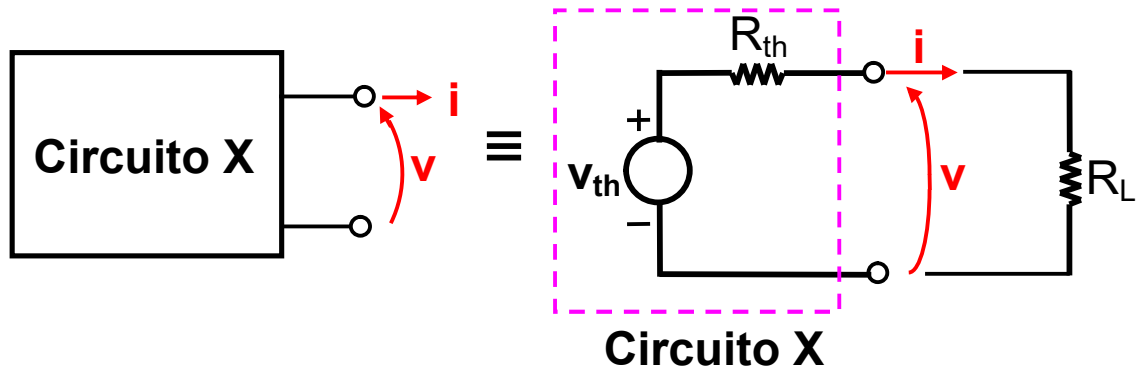
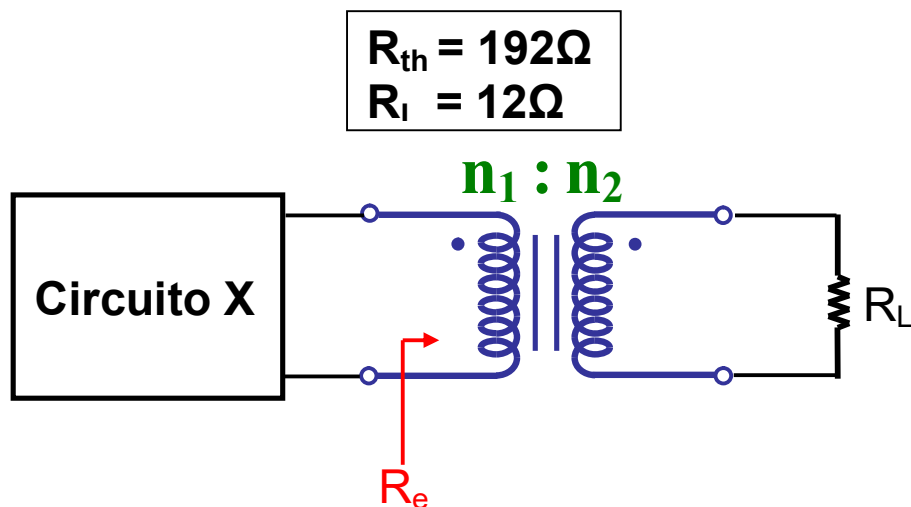


Trafo como dispositivo para casamento de impedância



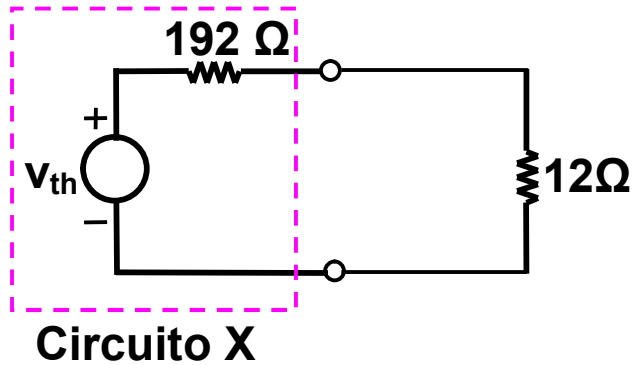
Para haver máxima transferência de potência: $R_L = R_{th}$



$$R_e = R_L \left(\frac{n_1}{n_2} \right)^2 \Rightarrow \frac{n_1}{n_2} = \sqrt{\frac{192}{12}} = 4$$

Potência dissipada em R_L

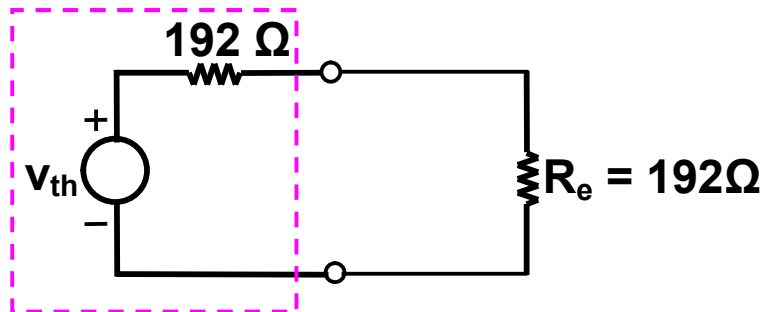
Sem o trafo



$$P_L = R_L i^2 = 12 \frac{v_{th}^2}{(192 + 12)^2} = 288 v_{th}^2 \mu W$$

Com o trafo

Circuito equivalente do primário



$$i_1 = \frac{v_{th}}{192 + 192}$$

$$i_2 = -\frac{n_1}{n_2} i_1 = -4 \frac{v_{th}}{192 + 192} = \frac{-4}{384} v_{th}$$

$$P_L = R_L i_2^2 = 12 \left(\frac{-4}{384} v_{th} \right)^2 = 1302 v_{th}^2 \mu W$$