

AmP1
2013

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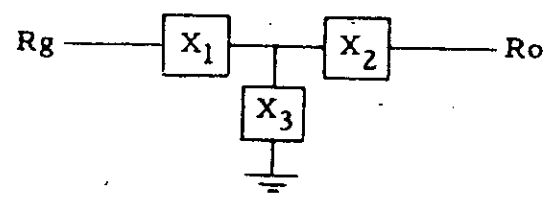
For a load resistance R_o

For a generator load R_g

To produce a lag of ϕ° in both voltage and current in the direction power is flowing through the network

$$\text{Let } R = \sqrt{R_g R_o}$$

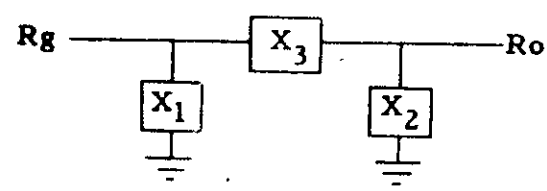
$$r = \sqrt{R_g/R_o}$$



$$X_1 = +j \frac{R}{\sin \phi} (1 - r \cos \phi)$$

$$X_2 = +j \frac{R}{\sin \phi} (1 - \cos \phi / r)$$

$$X_3 = -j \frac{R}{\sin \phi}$$



$$X_1 = -j R \sin \phi / 1 - \frac{1}{r} \cos \phi$$

$$X_2 = -j R \sin \phi / 1 - r \cos \phi$$

$$X_3 = +j R \sin \phi$$