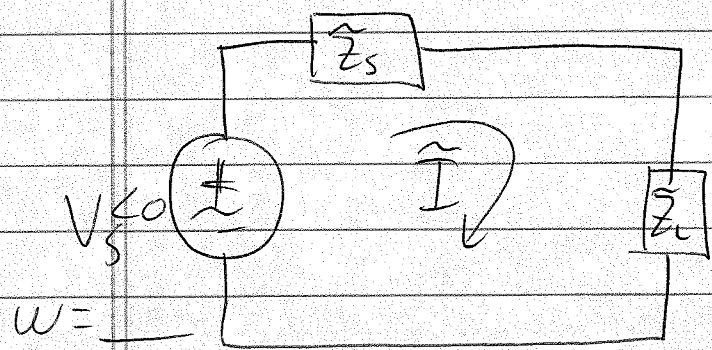
Go back to Thevenin Equivalent:



Let $\tilde{Z}_s = R_s + j\,X_s$

and $\tilde{Z}_L = R_L + j\,X_L$

$$\text{So } \tilde{I} = \frac{V_s \angle 0^\circ}{(R_s+R_L) + j(X_s + X_L)} = \frac{1}{\sqrt{(R_s+R_L)^2 + (X_s+X_L)^2}} V_s \angle \left[0^\circ - \tan^{-1}\left(\frac{X_s+X_L}{R_s+R_L}\right)\right]$$

$$\tilde{V}_L = \tilde{Z}_L \tilde{I} = \frac{R_L + jX_L}{(R_s+R_L)+j(X_s+X_L)} V_s \angle 0^\circ = \frac{\sqrt{R_L^2 + X_L^2}}{\sqrt{(R_s+R_L)^2 + (X_s+X_L)^2}} V_s \angle \left[\tan^{-1}\left(\frac{X_L}{R_L}\right) - \tan^{-1}\left(\frac{X_s+X_L}{R_s+R_L}\right)\right]$$

$$|P| = \frac{\sqrt{R_L^2 + X_L^2}}{(R_s+R_L)^2 + (X_s+X_L)^2} V_s^2$$

$$= |V|\,|I|\,V_s^2$$

make this maximum by making $(X_s + X_L) = 0$

or $\underline{\underline{X_L = -X_s}}$

We already know that if $\tilde{Z}_s$ + $\tilde{Z}_L$ are real,
then we maximize power delivered by
making $R_L = R_S$, so now we have

Max Power Delivered to Load when
$$\tilde{Z}_L = R_S - jX_S = \tilde{Z}_S^* \text{ (complex conjugate)}$$