Mark each True/False as either T or F. (1pt each)

_____ \( S_{ab} = (800+j600) \text{ VA} = 1000\angle 36.87^\circ \text{ VA} \).

_____ The energy absorbed by \( Z \) in three complete cycles of \( v(t) \) is 40J.

_____ \( v(t) = 50\sqrt{2} \cos(2\pi 60t - 36.87^\circ) \text{ V} \)

\text{Why or why not?} _____________________________________________________________

_____ \( Z = (2-j1.5) \Omega \).

_____ As \( L \) increases, the power absorbed by \( R_{\text{line}} \) will decrease.

\text{Why or why not?} _____________________________________________________________

_____ As \( L \) increases, the reactive power absorbed by the load will increase.

_____ Given \( R_{\text{line}} \) and \( R_{\text{load}} \), \( \eta \) will be the maximum possible when \( L=0 \).

_____ The required \( C_{\text{pf}} \), in Farads, increases as the inductance, in Henries, increases.

\text{Why or why not?} _____________________________________________________________

_____ As the load pf is increased toward 1, \( |I| \) will decrease which will increase the \( \% \)VR.

_____ Decreasing \( R_{\text{line}} \) will allow a smaller \( C_{\text{pf}} \) to be used to achieve a given \( \% \eta \) and \( \% \)VR.