1. Find a symbolic expression for $V_0(s)$ in terms of not more than $R_1$, $R_2$, $L$, $C$, and constants.

b) Choose numerical values for $R_1$ and $L$ to make

$$v_1(t) = v_m e^{-\alpha t} \cos(\beta t + \phi)$$

where $\alpha = \beta = 100 \text{rad/s}$ and $v_m$ and $\phi$ are constants.

2. Given $N_1/N_2 = 2$ and $\omega = 100 \text{rad/s}$, find a numerical value for $L$ to make $z_{L\Delta} = 3 + j3 \Omega$. 

v(t) = 4 - 4 u(t) V
Find the numerical value of the current, $I_{bb}$. 

\[ V_{a'b'} = 142 \angle 0^\circ \text{ V} \quad z_{g\Delta} = 24 + j33 \ \Omega \]
\[ V_{b'c'} = 142 \angle -120^\circ \text{ V} \quad z_{\text{line}} = j28 \ \Omega \]
\[ V_{c'a'} = 142 \angle 120^\circ \text{ V} \quad z_{L\Delta} = 3 + j3 \ \Omega \]