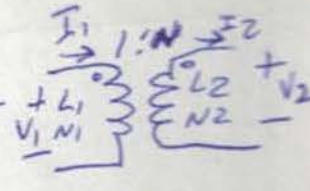


1:3 turns ratio
 1:9 inductor ratio

$$\frac{V_1}{V_2} = \frac{N_1}{N_2} = \sqrt{\frac{L_1}{L_2}} = \frac{1}{N}$$


$$\frac{I_1}{I_2} = \frac{N_2}{N_1} = \sqrt{\frac{L_2}{L_1}} = N$$

$$\underbrace{\frac{V_1}{I_1}}_{R_1} = \underbrace{\frac{V_2}{I_2}}_{R_2} \cdot \frac{N_1^2}{N_2^2} = \frac{V_2}{I_2} \cdot \frac{1}{N^2} = \frac{L_1}{L_2} \cdot \frac{V_2}{I_2}$$