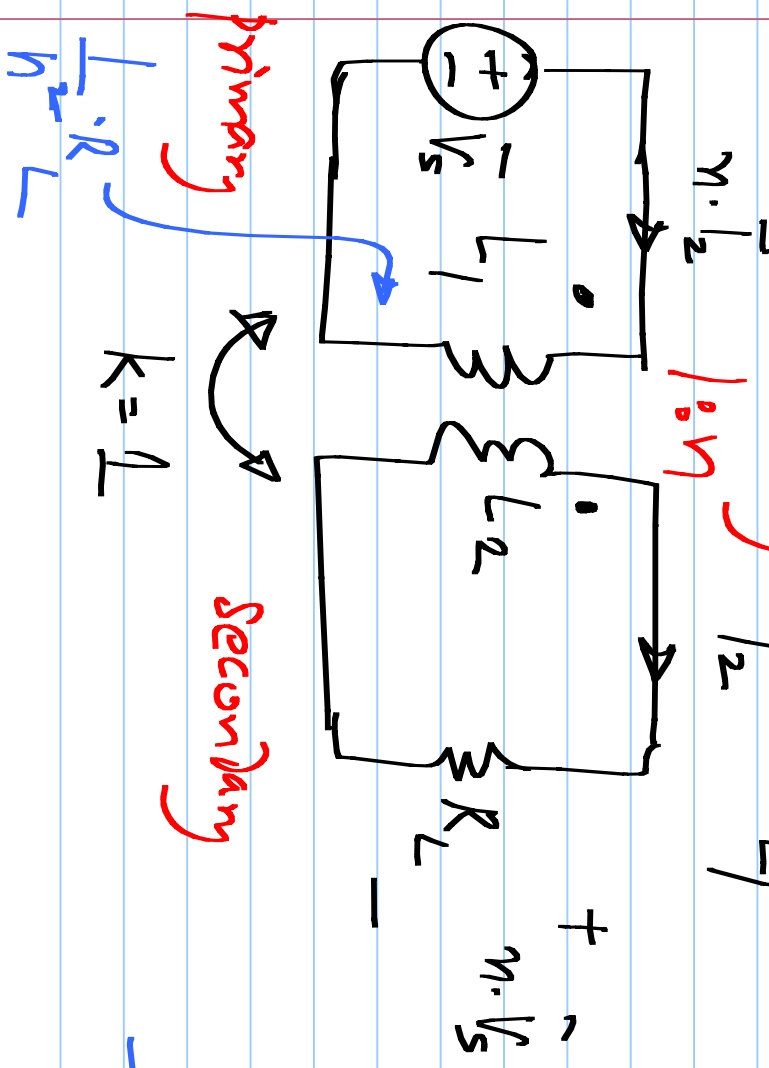


Lecture 42 :

Transformer:



$$\frac{L_2}{L_1} = n^2$$

Turns ratio

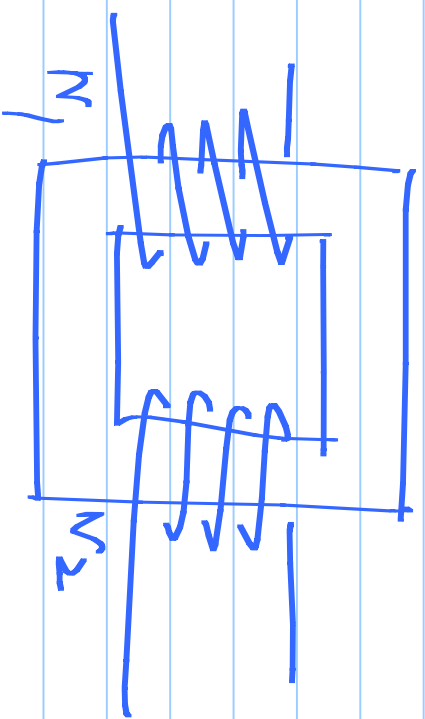
$$n > 1$$

Step-up transformer

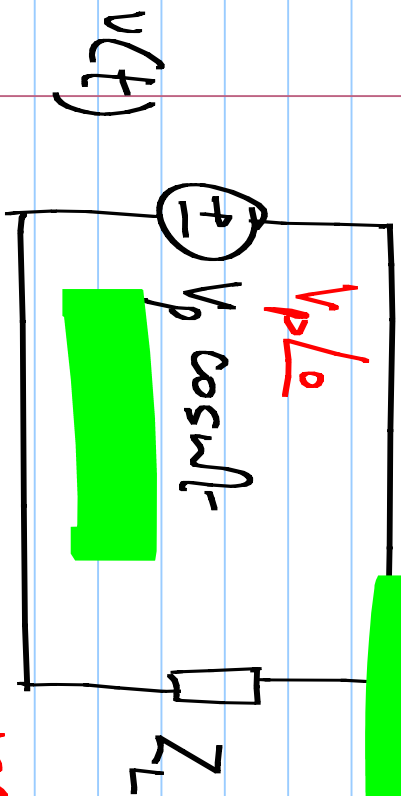
$$n < 1$$

Step-down

transformer



$$I_p \cos(\omega t - \phi) = I_0 \cos \omega t \cdot \cos \phi + I_0 \sin \omega t \cdot \sin \phi$$



$$\left[\frac{V_p I_p}{2} (1 + \cos 2\omega t) \cdot \cos \phi \right] + \left[\frac{V_p I_p}{2} \sin 2\omega t \cdot \sin \phi \right]$$

Average real power

$$\bar{P} = \frac{V I^*}{2} = P_R + j P_i$$

Peak reactive power

P_R [P. exp (j2\omega t)]