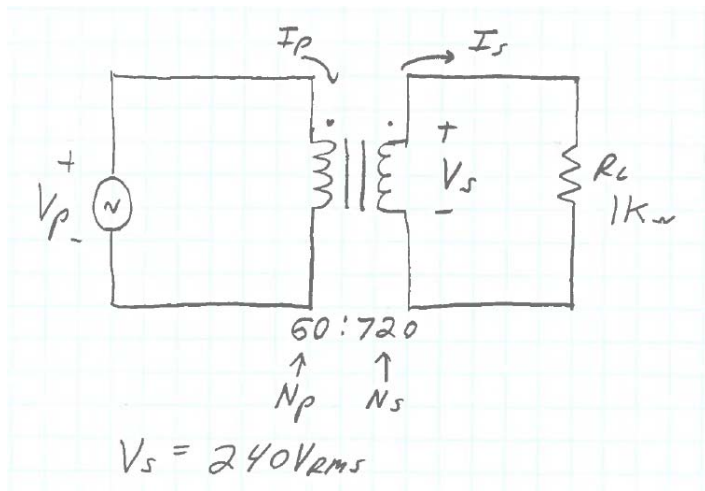


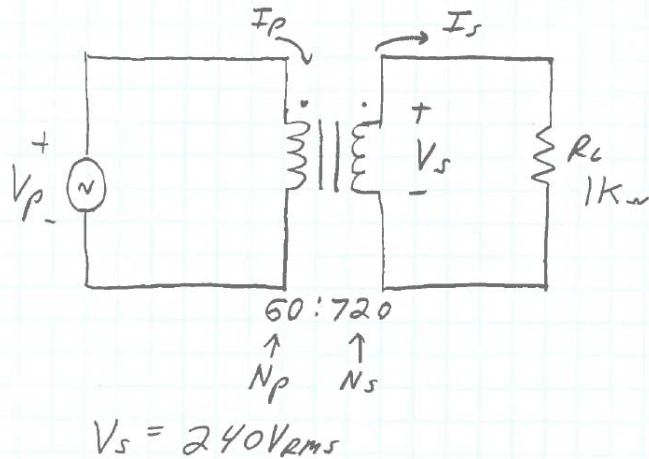
## Transformer Analysis (In Class Problem)



**Find:**

- a)  $V_p$
- b)  $I_s$
- c)  $I_p$
- d)  $P_{supplied}$  by  $V_p$

## Transformer Analysis (In Class Problem)



$$I_s = \frac{V_s}{R_L} = \frac{240V_{rms}}{1000\Omega} = \boxed{240mA_{rms}}$$

$$I_p = \frac{I_s}{a} = \frac{240mA_{rms}}{83.33 \times 10^{-3}} = \boxed{2.88A_{rms}}$$

$$P_{vp} = (V_p)(I_p) = (20V_{rms})(2.88A_{rms}) = \boxed{57.6W}$$

$$a = \frac{N_p}{N_s} = \frac{60}{720} = 83.33 \times 10^{-3}$$

$$\text{CHECK: } P_{RL} = \frac{V_s^2}{R_L} = 57.6W$$

$$\text{or } I_s^2 \cdot R_L = 57.6W$$

$$\left\{ \begin{array}{l} \frac{V_p}{V_s} = \frac{N_p}{N_s} = a = \frac{I_s}{I_p} \\ \downarrow P_{IN} = P_{OUT} \end{array} \right\}$$

$$V_p = a \cdot V_s = (83.33 \times 10^{-3})(240V_{rms}) = \boxed{20V_{rms}}$$