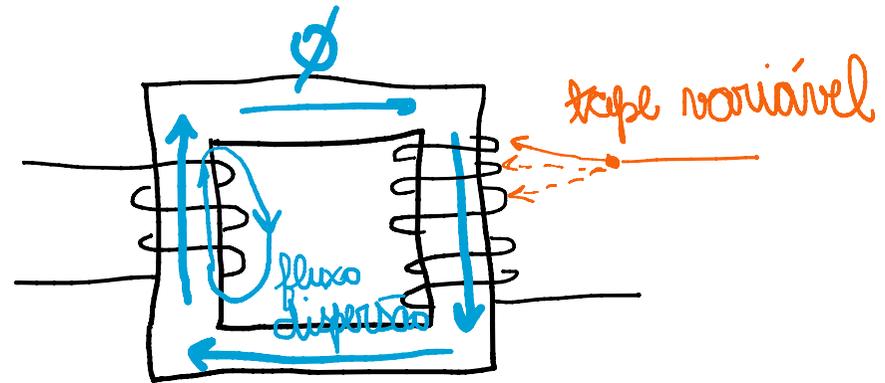
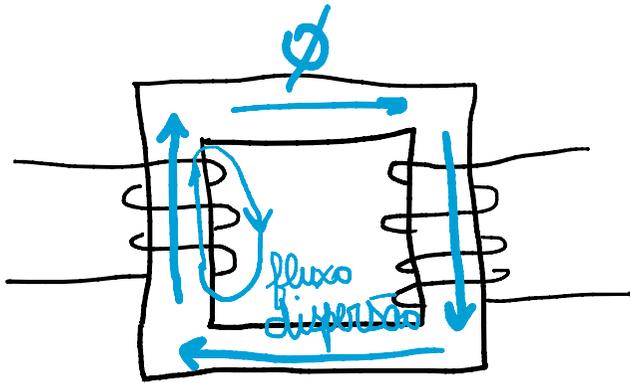


Transformadores

segunda-feira, 22 de junho de 2020 07:18



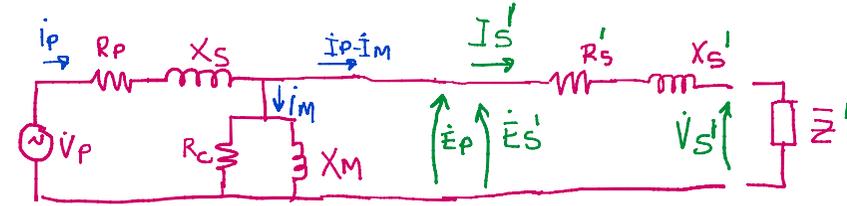
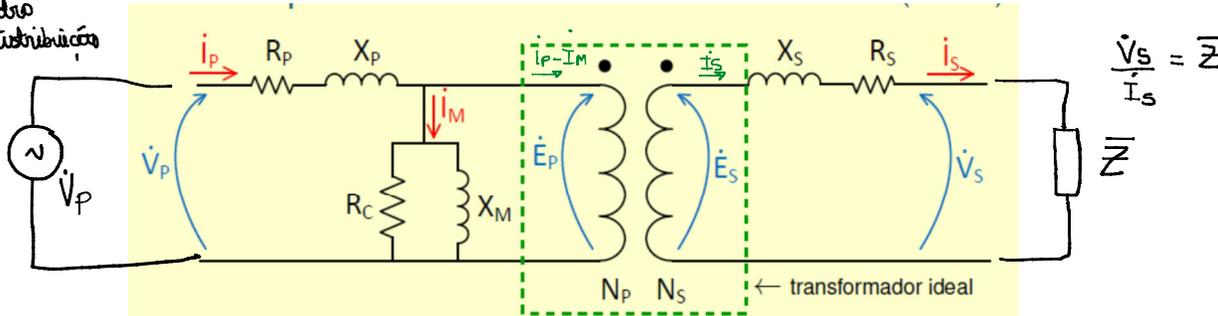
Transformadores

segunda-feira, 22 de junho de 2020 08:14
 Tomada
 Quadro de distribuição

$$\dot{E}_p = a \dot{E}_s$$

$$\dot{I}_s = a(\dot{I}_p - \dot{I}_M)$$

oficina eletrodomésticos
 (carga): carga:



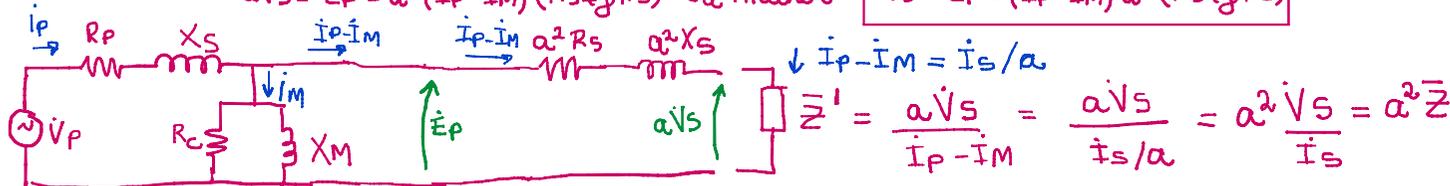
Ex: $\dot{V}_p = 220V$
 $\bar{Z} = (10 + j2)\Omega$
 Parâmetros do transf. conhecidos
 $a, R_p, R_s, X_p, X_s, R_c, X_M$

$$\dot{E}_s = \dot{E}_p / a; \quad \dot{I}_s = a(\dot{I}_p - \dot{I}_M)$$

$$\dot{V}_s = \dot{E}_s - \dot{I}_s (R_s + jX_s) = \frac{\dot{E}_p}{a} - [a(\dot{I}_p - \dot{I}_M)] (R_s + jX_s)$$

$$\dot{V}_s = \frac{\dot{E}_p - a^2(\dot{I}_p - \dot{I}_M)(R_s + jX_s)}{a}$$

$$a\dot{V}_s = \dot{E}_p - a^2(\dot{I}_p - \dot{I}_M)(R_s + jX_s) \text{ ou melhor: } a\dot{V}_s = \dot{E}_p - (\dot{I}_p - \dot{I}_M)a^2(R_s + jX_s)$$



$$\dot{E}_s' = a \dot{E}_s$$

$$\dot{V}_s' = a \dot{V}_s$$

$$\dot{I}_s' = \dot{I}_s / a$$

$$R_s' = a^2 R_s$$

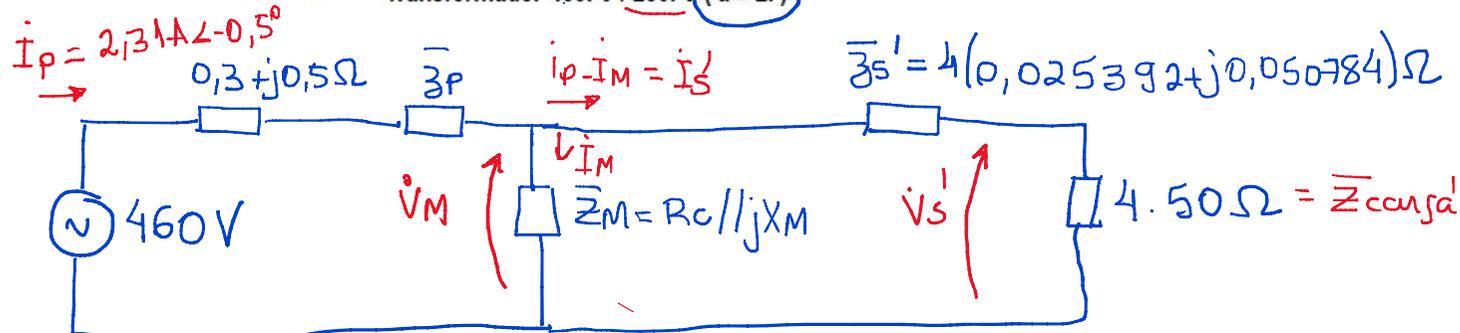
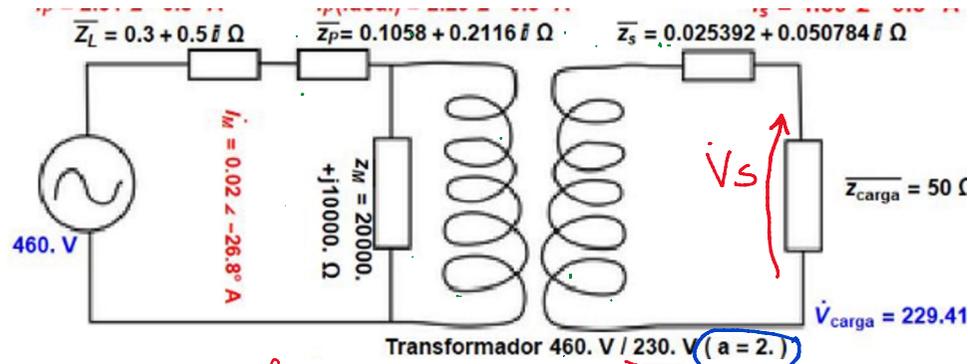
$$X_s' = a^2 X_s$$

$$\bar{Z}' = a^2 \bar{Z}$$

↑
valores refletidos ao primário

Transformadores

segunda-feira, 22 de junho de 2020 08:47



$V_M = 460 - i_p (\bar{Z}_L + \bar{Z}_p)$

$i_M = \frac{V_M}{\bar{Z}_M} = 0.02 \angle -26.8^\circ \text{ A}$

$i_s' = 2.129 \angle -0.3^\circ \text{ A}$

$V_s' = i_s' \cdot 200 \Omega = 458.82 \text{ V} \angle -0.3^\circ$ (refletida)

$i_s = a i_s' = 4.159 \angle -0.3^\circ \text{ A}$

$V_s = 229.41 \angle -0.3^\circ \text{ A}$

$\frac{V_s}{i_s} = 50 \Omega$