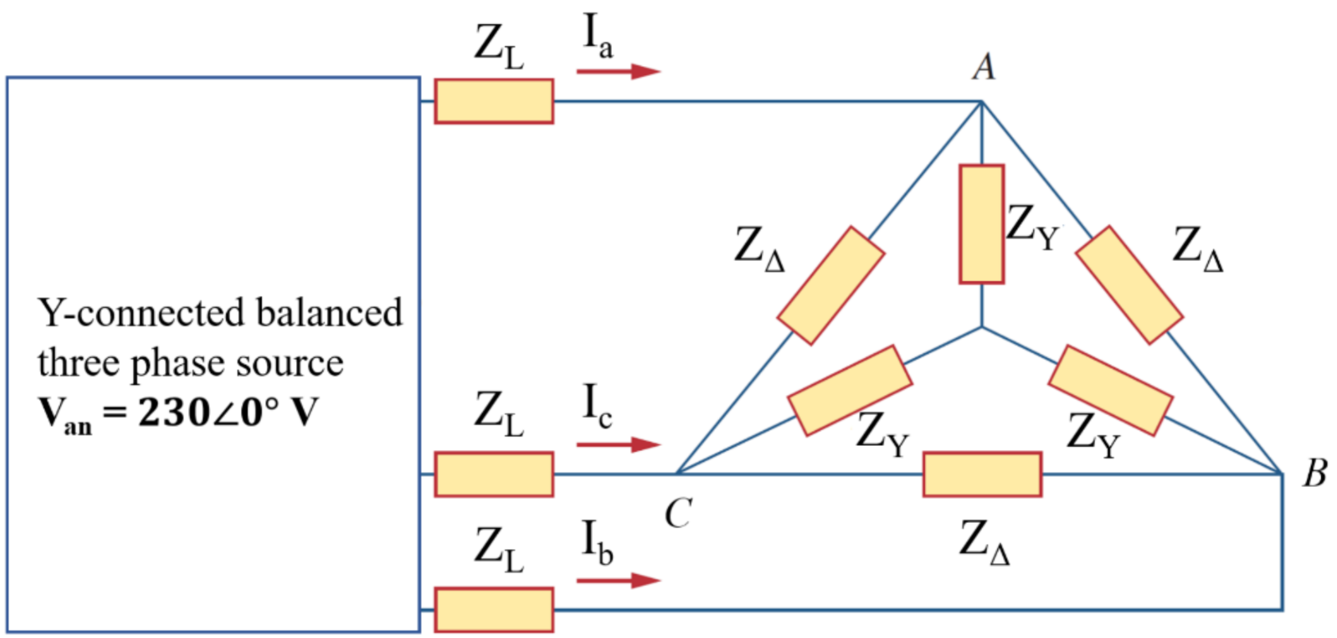
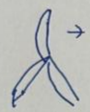
Please find (1) Line current $\mathbf{I_a}$, $\mathbf{I_c}$, and $\mathbf{I_b}$ and (2) **total complex power** at the loads, (combined $Z_\Delta + Z_Y$). Take $Z_L = 1 + j0.6\ \Omega$, $Z_\Delta = 6 - j9\ \Omega$, $Z_Y = 3 + j4\ \Omega$. All values are in **rms**. Assume **acb sequence**.



define: $Z_{Y1} = 3+j4$, $Z_{\Delta 2} = 6-j9$

Change. $\Delta \to Y$ Load.

$Z_{Y2} = \frac{1}{3} Z_{\Delta 2} = 2-j3$, we get  → Parallel Y-Loads

$$Z_{eq} = Z_{Y1} \parallel Z_{Y2} = 3+j4 \parallel 2-j3 = \frac{(3+j4)(2-j3)}{3+j4+2-j3} = \frac{18.03\angle -3.18^\circ}{5+j}$$

$$5+j = 5.1\angle 11.30^\circ$$

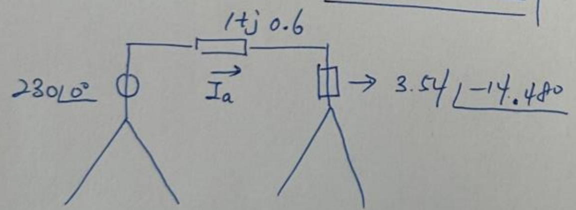
$$= \boxed{3.54\angle -14.48^\circ}$$

or $Y \to \Delta$

$Z_{\Delta 2} = 3Z_{Y2} = 9+j12$ $\quad\Delta$ in parallel.

$$Z_{eq\text{-}\Delta} = (9+j12) \parallel (6-j9) = \frac{(9+j12)(6-j9)}{15+j3} = \frac{3\times\cancel{3}(3+j4)(2-j3)}{\cancel{3}(5+j)}$$

$$Z_{eq\text{-}\Delta} \to Z_{eq\text{-}Y} = \boxed{3.54\angle -14.48^\circ}$$



$$I_a = \frac{230\angle 0^\circ}{\underbrace{1+j0.6+3.54\angle -14.48^\circ}_{= 4.44\angle -3.68^\circ}} = \boxed{51.80\angle 3.68^\circ}$$

$I_c = 51.80\angle -123.68^\circ$, $I_b = 51.80\angle -\cancel{24}3.68^\circ$

$$S = 3S_p = 3\times(51.80)^2 \times 3.54\angle -14.48^\circ = 28496.0\angle -14.48^\circ$$