#/2

EC
p.d 11.14 *
11.15

V_{r} $\angle$

A 2,400 V, balanced, three-phase delta circuit (see Figure 5-44, page 232 in the textbook) has phase load impedances of 40+j60 OHMS. Find the line currents I_{aA}, I_{bB}, and I_{cC}.

NOTE: Just as the current I_{aA} shown in Figure 5.44 is the current flowing from node a to node A, the current I_{bB} is the current flowing from node b to node B, and the current I_{cC} is the current flowing from node c to node C.

   a. $I_{aA}=57.64\ e^{j86.3°}$, $I_{bB}=57.64\ e^{-j153.7°}$, $I_{cC}=57.64\ e^{-j33.7}$

   b. $I_{aA}=33.28\ e^{-j56.3°}$, $I_{bB}=33.28\ e^{-j176.3°}$, $I_{cC}=33.28\ e^{j63.7}$

   c. $I_{aA}=57.64\ e^{-j86.3°}$, $I_{bB}=57.64\ e^{j153.7°}$, $I_{cC}=57.64\ e^{j33.7}$

   d. $I_{aA}=33.28\ e^{j56.3°}$, $I_{bB}=33.28\ e^{j176.3°}$, $I_{cC}=33.28\ e^{-j63.7}$

Chp 5

Z_Δ

$V_L = \angle 400\,V$

$I_\Delta = \dfrac{L_L}{Z_\Delta} = \dfrac{\angle 400}{40+j20}$

$I_{AC} = I_\Delta \angle$