

ET 332b
Three Phase Connections

Consider the system show below. The delta-connected load is balanced and made up of three impedances that have $Z = 27.7 \angle -40^\circ$ ohms per phase. The wye-connected source voltages are $V_{an} = 277.1 \angle 0^\circ$ V, $V_{bn} = 277.1 \angle -120^\circ$ V, and $V_{cn} = 277.1 \angle 120^\circ$ V. Determine:

- a.) The phasor load voltages V_1 , V_2 , and V_3
- b.) The phasor load phase currents I_1 , I_2 , and I_3
- c.) The phasor line currents I_{L1} , I_{L2} , and I_{L3}

