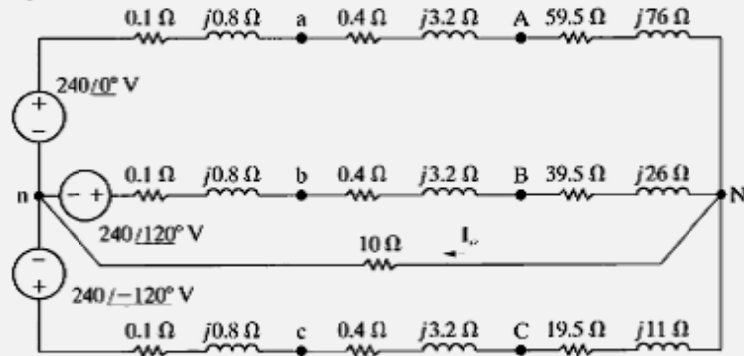


توجه: تحويل ۱۱.۶, ۱۱.۱۷, ۱۱.۳۷, ۱۱.۳۸ ۲۳ فروردین بقیه مسائل تحويل ۲۸ فروردین

11.6 Find the rms value of I_o in the unbalanced three-phase circuit seen in Fig. P11.6.

Figure P11.6



11.62 A three-phase *abc*-sequence wye-connected source supplies 14 kVA with a power factor of 0.75 lagging to a delta load. If the delta load consumes 12 kVA at a power factor of 0.7 lagging and has a phase current of $10\angle-30^\circ$ A rms, determine the per-phase impedance of the load and the line.

11.67 A small shopping center contains three stores that represent three balanced three-phase loads. The power lines to the shopping center represent a three-phase source with a line voltage of 13.8 kV rms. The three loads are

Load 1: 400 kVA at 0.9 pf lagging

Load 2: 200 kVA at 0.85 pf lagging

Load 3: 100 kVA at 0.90 pf lagging

Find the power line current.

11.77 Find C in the network in Fig. P11.77 such that the total load has a power factor of 0.9 lagging.

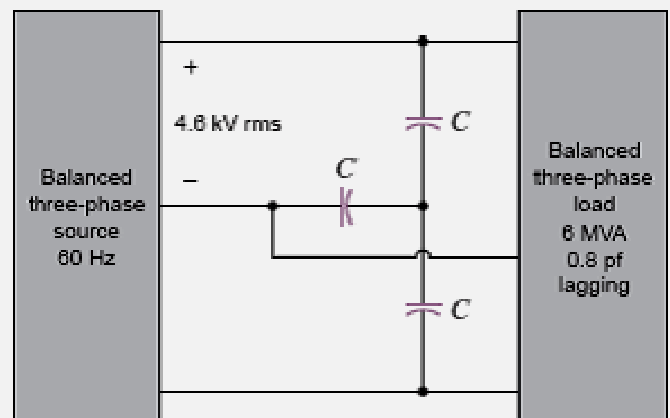


Figure P11.77

11.17 An *abc*-sequence balanced three-phase wye-connected source supplies power to a balanced wye-connected load. The line impedance per phase is $1 + j5 \Omega$, and the load impedance per phase is $25 + j25 \Omega$. If the source line voltage $V_{ab} = 208\angle0^\circ$ V rms find the line currents.

11.37 An *abc*-phase-sequence three-phase balanced wye-connected 60-Hz source supplies a balanced delta-connected load. The phase impedance in the load consists of a $20\text{-}\Omega$ resistor series with a 20-mH inductor, and the phase voltage at the source is $V_{an} = 120\angle30^\circ$ V rms. If the line impedance is zero, find the line currents in the system.

11.38 In a three-phase balanced system, a delta-connected source supplies power to a wye-connected load. If the line impedance is $0.2 + j0.4 \Omega$, the load impedance $3 + j2 \Omega$, and the source phase voltage $V_{ab} = 208\angle10^\circ$ V rms, find the magnitude of the line voltage at the load.

11.47 In a three-phase balanced delta-delta system, the source has an *abc*-phase sequence. The line and load impedances are $0.3 + j0.2 \Omega$ and $9 + j6 \Omega$, respectively. If the load current in the delta is $I_{AB} = 15\angle40^\circ$ A rms, find the phase voltages of the source.