King Fahd University of Petroleum & Minerals

Electrical Engineering Department

EE 360: Home Work #1

Due Dates (Sep 10th for SMW Classes & Sep 11th for UT Classes)

1. Problem A-2 from text
2. Problem A-3 from text
3. A balanced 3-phase, 173-V, 60-Hz source supplies the two following loads:

   - A Δ-connected load with a phase impedance of $(18+j24)\ \Omega$,
   - A Y-connected load with a phase impedance of $10\angle 53.13°\ \Omega$.

   Find:

   a) The power factor of the entire load.
   b) The total line current supplied.
   c) The total real, reactive, and apparent powers.

   If two watt-meters are connected to measure the total power supplied. Find the reading on each instrument.

4. The 2 wattmeter method used to measure the power of a Δ-connected load gave the wattmeter readings as 1560W and 2100W. If the line voltage is 220-V, calculate

   a. Power per phase
   b. Reactive power per phase
   c. The power factor
   d. The impedance of each phase