* 1. Watch the video
     + Week 8 Video Lecture – Power Factor Correction



* 1. Consider the circuit demonstrated in this week’s presentation. Analyze the circuit to determine the following (include both polar and complex forms where applicable):
     + Zeq
     + IT
     + IR1
     + IL1
     + Real Power (Watts)
     + Reactive Power (VARs)
     + Apparent Power (Vas)
     + Power Factor
  2. Construct the circuit in MultiSIM and run a Single Frequency Analysis to confirm your calculations for the phasor values in part 2**. Capture a screenshot of the analysis for both Magnitude/Phase (polar) and Real/Imaginary (complex). Create a table with your expected and measured results.**
  3. Measure the real power of the circuit and the power factor using a watt meter**. Capture a screenshot of the watt meter readings.**
  4. Based upon the power factor, determine the value of the capacitors needed in each case to bring the power factor to the following values. Be sure to show your calculations.
     + Power Factor = 0.85
     + Power Factor = 0.95
     + Power Factor = 1.00
  5. Insert each of the capacitor values found in step 5 into the circuit one at time and confirm the power factor correction with a watt meter. Use a 5% tolerance for the capacitors. **Capture a screenshot of the watt meter for each case. Create a table of expected and measured results. Comment on how well the desired power factor was achieved and any reasons for discrepancies.**