**Chapter 2 suggested homework problems**

2.20 I would recommend you calculate the individual powers for each impedance first, and then combine the powers algebraically. As a check, you can compute the parallel impedance and then calculate the total power.

2.24 This one is good practice for Problem Set #1. You should be able to work with various load descriptions, getting everything to a single “language”, like the rectangular form P + jQ. Hint: the lighting load is assumed to have a power factor of 1.0.

2.27 Nowadays, pf correction is done automatically using banks of capacitors that can be switched in and out incrementally. Still, it is important to understand exactly what is happening with pf correction.

2.30 Here is some additional practice on combining single phase loads and designing power factor correction.

2.37 You will note the similarity between this circuit and the one I gave you in the first problem set. I encourage you to be able to quickly do complex arithmetic calculations using a tool. You don’t want to have to do these by hand. It is very easy to do in MATLAB, and most modern calculators will also do this. There are also “calculator” websites out there for this purpose.

2.43 The key to analyzing balanced 3-phase circuits is developing the single-phase model. Once analysis is done on a Y-Y equivalent single phase, the results can be easily extended to all three phases.

2.51 Here is one more good practice problem for 3-phase circuits.