

ECE370 POWER & ENERGY SYSTEMS

Hints & Answers for HW # 2

- 2.1 (d) -10.8 kVAR
- 2.2 The current's angle is now positive. Re-calculate the sending-end voltage and draw the phasor diagram with the current pointing upwards.
- 2.3 Note that 2.4 kV is the *LINE* voltage at the load.
(a) $\mathbf{S} = 640 - j480$ kVA (b) Remember impedance is a phase quantity.
- 2.4 Recall that hp refers to mechanical power.
(a) $\mathbf{I}_{total} = 160.7/\underline{-11.5}^{\circ}$ A (b) 0.98 lag
- 2.5 (a) 21.85 kVAR (b) $\mathbf{I}_{before} = 100/\underline{-49.5}^{\circ}$ A