## ELEC 306 Problem Set 7 Due: October 24, 2014

## **Homework Problems.**

Work the following problems in Sadiku:

**H7.1** 9.7

**H7.2** 10.5

**H7.3** 10.52

**H7.4** A nonmagnetic medium has an intrinsic impedance of  $240\angle 30^{\circ}\Omega$ . Find its

- (a) Loss Tangent
- (**b**) Dielectric constant
- (c) Complex permittivity
- (d) Attenuation constant at 1 MHz
- **H7.5** A long straight cylindircal wire of conductivity  $\sigma$  and radius *a* is carrying a uniform axial current with density *J*. Calculate the magnitude and direction of the Poynting vector at the surface of the wire.

**Real Problems.** None this week.