EE331 — Homework #2 / Due Wednesday, Jan. 29, 2020 **at the beginning of class**

1. The processor on my trusty Apple MacBook Air, jazz, operates at 1.8 GHz. Assuming a signal propagates at the speed of light (3×10^8 m/s), (a) how long can the conductors connected to the CPU motherboard be before we might not be able to ignore their effects as transmission lines, and (b) how short must they be so that we can safely ignore them based on the rules of thumb discussed in class?

2. For the lumped element model, we have four transmission line parameters. (a) What are these parameters and what do they represent physically? Just regurgitate what was said during class, keeping your answers short and simple. (b) Which of these parameters can be zero, and what is the physical meaning when they are zero? Again, keep your answers short and simple.

3. Ch. 11, Prob. 11.2.

4. Referring to Prob. 3, if the maximum amplitude of a wave traveling on the line is 10 V and the wave is traveling in the positive z direction, find the phasor expression for the voltage. Assume the phase angle is zero.