**Problem #1: Benchmark Your 1D FDTD**

Duplicate the results from all three simulations discussed in Lecture 9. For each case device provide professional plots of the following: (1) the final reflectance, transmittance, and energy conservation for each device, (2) the amplitude of the steady-state electric field at the design frequency throughout the entire grid superimposed onto the device materials using draw1d(). For the dielectric slab use 500 MHz as the design frequency. You will generate a total of six different plots for this problem.

Hints:
1. In MATLAB, the `log()` function is a natural logarithm. The function for the base-10 logarithm is `log10()`.
2. When given an amplitude quantity $A$, use the following equation for decibel calculation: $P \text{ (dB)} = 20 \log_{10} (A)$.
3. When given a power quantity $U$, use the following equation for decibel calculation: $P \text{ (dB)} = 10 \log_{10} (U)$.