For this assignment... Investigate following problems in MATLAB.
Submit to me a digital PDF document file including brief discussion on each problem, copies of figures, plus the text of the modified MATLAB code.

Please make note: In the figure, E is plotted as E/eta, so that it has the same amplitude as H.

Using the MATLAB file "emwave.m":

As it is set up, the code generates a standing wave at ~2.4 GHz frequency, with a horizontal dimension sufficient to hold exactly 1.5 wavelengths. Note that the code calculates frequency based on horizontal dimension and number of desired wavelengths to fit in the box. *Note that if you have any plotting issues, first try commenting out the "pause" commands at lines 107 and 114.*

1) Confirm the wavelength, frequency, and horizontal width of the box (you can calculate manually, or refer to variables generated by the m-file).
2) Change the parameter M to instead allow 5 wavelengths within the box (note the change in frequency). Print a plot of your standing wave field variables and instantaneous *S* after the simulation has completed. Discuss in a few sentences the features of *E*, *H*, and *S*.
3) Edit the boundary conditions ("bc" variable to equal "0") to set conditions for an open box. Adjust the limits of the plot to create an appropriate output showing S. Discuss in a few sentences the features of S for the unreflected wave, compared to **2**.
4) Change "bc" to "1" again, and set M=10, G=1/40, T=1/10. Plot your wave field variables at three interesting times: When the wave is left-going, when the wave is reflecting, and when the wave is right-going. Discuss in a few sentences the features of *E*, *H*, and *S.*