Prep guide – Wavespeeds, power, and TM modes.

Big picture goal – First we're going to take the TE fields that we found and figure out how fast they're propagating and the manner in which they transport energy. Then we're going to see how to get TM modes.

1) Give me a qualitative description of the energy transport in a parallel plate waveguide with TE modes. In what directions does the Poynting vector point in general? What about the time-averaged Poynting vector?

2) What is a cutoff frequency in this context? Define it qualitatively, and also tell me what ω_c is equal to for parallel plate TE modes.

3) How do the dispersion relations for TE and TM modes differ from one another?