Preparation Assignments:

Due Wednesday(Tuesday), April 23(22)

A plane wave traveling in air is normally incident on a dielectric boundary. The total field in air is $E_{tot} = (5e^{-j\beta z} - 3.2e^{+j\beta z})\hat{x}$ [V/m].

What is the relative permittivity of the dielectric?

What is the transmission coefficient?

Due Monday, April 28

A plane wave is obliquely incident on a Teflon/Bakelite boundary. The angle of incidence is 45° and the incident wave is in Teflon.

What is the reflection coefficient and transmission coefficient if the wave has parallel polarization?

What is the reflection coefficient and transmission coefficient if the wave has perpendicular polarization?

Due Wednesday(Tuesday), April 30(29)

For both polarizations in the previous problem, determine the total wave in both the Teflon and the Bakelite.