Problem 1. (10 points) Griffiths Problem 9.28. [Note: You may use the fact that we know that TEM modes do not exist for a hollow wave guide.]

Problem 2. (10 points) Griffiths Problem 9.29. [Note: Here frequency means $\nu$, not $\omega$.]

Problem 3. (15 points) Griffiths Problem 9.31. [Note: The boundary conditions for the electric and magnetic fields are not the same so we do not expect the TM modes to be the same as the TE modes.]