

## Prep guide – Rectangular waveguides

Big picture goal – Be able to solve for the modes made by a rectangular conducting waveguide – one of the most common physical waveguides in actual use.

1) Give me a qualitative description of the  $x$ ,  $y$ , and  $z$  dependences of rectangular waveguide modes. Be clear about what the  $x$ ,  $y$ , and  $z$  directions correspond to.

2) If you haven't already, walk through the argument that leads to the function  $\Psi$ . Put a little care into it, and write down the major steps. Start from line 14.44 and end at 14.52 (roughly 4:00 to 6:20 in the video).