1) Look again at Griffiths 9.1.3 (Boundary conditions for 1D waves). He gets to 9.25, the main formula for the 1D waves he is considering. I have a couple of questions about this:

i) Why is there not a fourth term, for z>0, with negative k2?

ii) Is the phase of (Tilde A_T) the SAME as the phase of (Tilde A_I), or might they be different? (If different, when, how?)

iii) Is the phase of (Tilde A_R) the SAME as the phase of (Tilde A_I), or might they be different? (If different, when, how?)

2) Although sinusoidal waves are really fairly simple, the complex notation we're using gets rather thick! Just for practice - look at equation 9.49, and assume that in some situation n-hat is x-hat, **k** is in the +z-direction, and (tilde E_0) is the complex number A $e^{i\,\pi/2}$ (that's A exp[i pi/2]) , with A a real constant).

What direction in space would this wave be moving? (x, y, z, some other direction/ not determined)

3) In the previous setup:

Which direction (i.e. along which axis) is this E vector *pointing* in space? (Don't worry about sign, it's oscillating!) (x, y, z, something else/not determined)

4) In the previous setup: Which way is the corresponding B vector pointing in space? (x, y, z, something else/not determined)

5) What does the phase (pi/2) that I assumed above tell you physically about this wave?

Is B in phase with E, with these givens? (Briefly, explain, and feel free to explain any of your above multiple choice answers if you want to clarify your reasoning)

6) As we've done in the past, go up to the "discussion" tab, and join this week's "preflight" discussion. Post your question there, or, if there are already some good questions, READ them and reply, give your best answer (or comment, or related question...).