

1) Griffiths proves, on Page 296-7, the "Flux rule". If you haven't done so, take a few minutes to really try to make your way through that proof. (Depending on your responses here, I may or may not need to go through the derivation in lecture – but either way, it's worth seeing what you can get out of it just by reading. If you are deeply confused, you can also ask about it in the last preflight question this week!)

For here, after looking at the proof, just tell me in your own words, what " w ", " v " and " u " in that proof represent physically. (If you really understand that, you understand a lot of the proof!)

2) On Griffiths p 302, he moves from Eq 7.14 to 7.15 (an integral expression) to Eq 7.16 (one of Maxwell's equations in differential form) In the intermediate step (Eq 7.15), he moved the time derivative into the integral. I have THREE questions here:

a) Is 7.14 "derived" (is it what we proved on page 296-7) or is it "experimental" (empirical) (or something else entirely?)

b) Why did the full time derivative in Eq. 7.14 suddenly become a partial time derivative in 7.15?

c) Why does the " d/dt " in Eq 7.15 operate on the B field, but not also on the "area element"? I.e., why didn't we end up with TWO terms from the chain (or product) rule?

3) Please submit a question you have about the reading assigned for the upcoming class. What seemed hard, was something confusing, what would you like us to spend class time on? If you can't come up with any question, how about a comment - (did anything strike you as interesting?)