Questions and Answers from 3x5 cards

Dr. Dave Shattuck, September 11, 2013

Sometimes, I will answer selected questions from the 3x5 cards in class. At other times, it seems more appropriate to handle them by email. This time, I will handle them by email.

1. Question: Do we need to clearly label nodes/surfaces we use for KCL? Same with KVL but with loops?  
   Answer: No, it is not required. At the beginning it is recommended, more for your own sake than for ours. It helps you check your work.
2. Question: Do you use the same jokes every semester?  
   Answer: Mostly yes. I reserve the right to change jokes when I wish, but I very often tell the same jokes over and over again. This is intended to give students incentive to pass my courses on their first attempt.
3. Question: Can I put past problems on the crib sheet?  
   Answer: Sure. Be my guest.
4. Question: Why is saying open circuit not the right answer for no current going through node E on the first problem (in class September 9).  
   Answer: Right now, I cannot remember the specific question that was asked in this case, nor why I resisted that answer. I will say this: we have not yet formally defined “open circuit”, so I would prefer not to use it yet. I am not sure why I said no in this case.
5. Comment: I am concerned about how complicated the HW problems were when your lectures never showed how to solve more than a basic one. There were no integrals or formulas for v and I in your lectures.  
   Reply: This is why I do not want to have you put your names on these 3x5 cards. This comment disturbs me. The implication is that you think that I need to show you how to plug in expressions for variables in an equation. The implication is that you think I need to show you how to integrate. I believe that if you think that, you should change your major out of engineering. This sounds harsh, but really, this viewpoint is not appropriate. I do not have time in class to teach you algebra or calculus. This is engineering. Step up your game. Again, it is good that you do not put your names on these cards.
6. Question: Will we have to integrate on the quiz, and will it be a complicated one?  
   Answer: This is another question that disturbs me. See last question.
7. Question: I have a question about loops. Why did your belt miss one on your pants this morning?  
   Answer: How embarrassing! If I had written a KVL with my pants, I would had a belt with a bad sign! Minus fours points!
8. Question: What happens physically in a resistor to cause its function?  
   Answer: I am not sure of the use of the word “function” here. Rather, I would say that the behavior that we find in a resistor results typically from the charge carriers, typically electrons, running into atoms as they move through the materials. However, it could be other mechanisms; the only thing required is that the current and voltage are proportional.
9. Question: Can a closed loop, loop back on itself?  
   Answer: Sure. The only requirement is that it ends where it starts. If it loops back, the terms involved will cancel. It might well result in a trivial equation, but a true trivial equation. For example, 0=0 is true, but does not help us much.
10. Question: I like to include [units] with variables to keep track of them. Is that verboten?  
    Answer: Ja, das ist verboten. Sorry, but with SI, we place units with numbers, not variables. Variables are assumed to have the ability to have several different values, depending on the units chosen. And, never zwei languages zusammen putten.
11. Question: Can you have a current source equal to zero?  
    Answer: Sure. Later, we will formally define this as an open circuit.
12. Question: Will we go over the homework in class?  
    Answer: Only if you ask a question about it. I assume that if you do not, that means that you have understood the homework. If you understand it, there is no point to going over it. We have very limited time in class, and I need to spend it on the most important things.