Questions and Answers from 3x5 cards

Dr. Dave Shattuck, September 5, 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: Are homeworks due at the beginning of next class?  
   Answer: Yes, your homework must be submitted at the beginning of class. Five minutes after class begins, submitted homework is late, and earns a grade of zero.
2. Question: If nothing is plugged into a wall socket, is it a source?  
   Answer: Yes, it is. First, let me assume that we are modeling the wall socket as a voltage source, which is typically the case, as we will discuss later. A voltage source is a source, whether it has current flowing through it or not. Remember that a voltage source does not care about current.
3. Question: I still kind of want to use [Mhos]… Will that anger you on tests?  
   Answer: Let us leave my anger management issues aside for the moment. We should use the standard units, because standards are important. Please join me, however regretfully, in using standard units.
4. Question: What is your salary in dollars?  
   Answer: This seems like an inappropriate thing to discuss in such an email. I will just say that the Texas Tribune has the salary of every state employee on their website. Whether this is good or bad is not for me to say.
5. Question: How were you able to tell the sign convention on the battery problem? Depending on which battery you look at it could be active or passive.  
   Answer: Exactly! In the example we did in class, one battery was in the active sign convention, and one was in the passive sign convention. We arbitrarily picked one battery to look at. Then, for that battery, we identified the sign convention from the relationship between the reference polarities for that battery.
6. Question: What do you mean by intermediate answers?  
   Answer: We mean an answer you find on the way to a final answer. Suppose you were to find a power, but first you need to find a voltage. When you find that voltage, it must be shown with units.
7. Question: Do you have any solid, proven tips on how to work the problems?  
   Answer: Not really. Rather, I have suggestions I will offer through the course of the course. “Solid, proven tips” sounds too rigid to me. Now, we will have solid rules, some of which I have already shared with you. More will follow.
8. Question: Are there any other tutor sources that you can share with us?  
   Answer: No. It would pose a potential appearance of a conflict of interest to refer paid tutors to students in my own class. As a rule, I do not do it. I can refer you to LSS, since you already pay them through your tuition and fees. But, no, I do not provide references to other tutors. Sorry.
9. Question: How are voltage/current sources similar to water in the hydraulic examples?  
   Answer: Great question! A voltage source would be analogous to an infinitely-large tank, holding water somewhere above us. A current source would be analogous to a water pipe that produces a fixed volume of water, per [second], no matter what it is connected to.
10. Comment: Whenever I get emails from you I can’t help but read them in your voice.  
    Reply: How clever of you! That is a rare talent. And, I will take that as a compliment.
11. Comment: I thought that voltage didn’t depend on current and vice versa.  
    Reply: It depends. Clearly, in an independent voltage source, the voltage does not depend on the current flowing through the source. However, in a current dependent voltage source, the voltage depends on a particular current flowing somewhere else. In current sources, we have a similar situation. In addition, in a resistance, the voltage and current are proportional, so in a sense they depend on each other. So, it depends. (Insert smiley-face emoticon here.)