

Physics 115 – Section 201
Homework #2
Due February 12, 2007

Essay 1, 10 points

Discuss how the number of batteries in a series circuit affects the current in the circuit. Be careful to discuss how the direction and the placement of the batteries affects the current. Describe the evidence that supports this conclusion.

Essay 2, 10 points

Discuss how the number of bulbs in a series circuit affects the current in the circuit. Be careful to discuss how the placement of the bulbs affects the current. Describe the evidence that supports this conclusion.

Essay 3, 10 points

In class, we have several “models” from every day life for electricity. Pick one of the models discussed in class, or come up with your own model. Describe the model. What represents the battery? The wires? The electrons? The current? The bulbs? In your model, how would you measure the current? Discuss how our results so far relate to these models. What would the model predict for the outcome of each experiment? Why? Did the result agree?

Problem 1, 10 points

Describe the brightness of the bulbs in the following circuits, in terms of “battery equivalents” (in other words, if you had a series circuit with X batteries all in the same direction and just one bulb in the circuit, the brightness is X “batter equivalents”)?

