

Problems from the Text: Chapter 16

6, 8, 10, 14, 26, 33, 36, 59

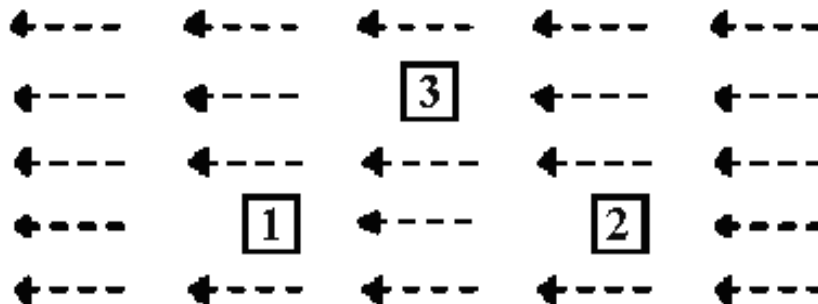
(Note: the odd problems from the book have solutions in the back.
In order to get credit, you must show your work. Just an answer will get no credit.)

What's a field?

In this class, we repeatedly refer to an “electric field”. Describe what an electric field is. Discuss how you would know a non-zero field was present and how you would measure it.

Tutorial Problem

1. A positive charge might be placed at one of three different locations in a region where there is a uniform electric field, as shown below.



How do the electric forces on the charge at positions 1, 2, and 3 compare? Explain why you think so.

2. Two identical charges of magnitude q rest at the positions A and B as shown. The electric force felt by charge A due to charge B has magnitude F . Answer each question assuming that the original situation is restored before the change described in the question (i.e., don't cumulate changes).



- a. How would the electric force felt by the charge at A change if the charge at B were doubled? Explain why you think so.

- b. How would the electric field felt by the charge at A change if the charge at B were doubled? Explain why you think so.

- c. How would the electric field felt by the charge at A change if the charge at A was doubled? Explain why you think so.