GAUSS'S LAW

Prof. Stephen Sekula

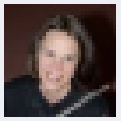
9/3/2010

Supplementary Material for PHY1308 (General Physics - Electricity and Magnetism)

Stephen Sekula Notes and slides from #phy1308 lecture 5, "Electric Field Lines and Electric Flux", are now available online (http://bit.ly/c8sNa3)

> **http://www.physics.smu.edu/sekula/phy1308/notes.html**

11 hours ago via chirpatcooleysekula · · Comment · Like



Kate Sekula Is that anything like Aeon Flux?

9 hours ago · Like · Delete

Stephen Sekula Actually, Aeon Flux is a related concept. The Aeon Flux, denoted "a", is given by the dot product of the momentum vector of Aeon (p) and the vector, A, that is normal to the surface she hits after being shot at and falling off a building. In the early Aeon Flux episodes, pA was infinite (we call that "splat" in the business). In the later spinoff series, pA was finite and small. In the movie, it was zero because nobody saw the stupid movie.

a few seconds ago · Like · Delete

Write a comment...

ANNOUNCEMENTS

- Homework 2:
  - Due next Tuesday by 5pm
    - place in my mailbox in Fondren Science 102
    - grader will pick up at 5 sharply. Anything later than that gets a zero.
  - Bonus problem!
    - worth extra points on the first in-class exam (Sep. 24)
- Next in-class Quiz
  - Next Friday! Based on the problems and concepts from Homework 2.

QUIZ PROBLEM

1. Lightning occurs when friction in the atmosphere, due to collisions between ice crystals and water droplets, causes the build-up of a charge in clouds. Heavy, slightly negatively charged ice-water droplets fall to the bottom of the cloud while lighter, slightly positively charged ice crystals rise to the top of the cloud. Consider the sketch below of such a situation in clouds.

   a. What is the magnitude of the force exerted by a single, positively charged ice crystal at the top of the cloud on a single, negatively charged ice-water droplet at the bottom of the cloud, assuming the charges are separated by $2.0 \times 10^{3}\text{m}$? Assume that the magnitude of the charges are both equal to $3.0 \times 10^{-17}\text{C}$.

   b. If a typical cloud-to-cloud lightning flash delivers 10.0C of charge from one side of the cloud to the other, how many elementary charges are transferred?