Assignment 6

Physics 321
Electrodynamics I

Due on Friday, September 20th, 2024

Class date: September 16th, 2024.
Reading: pp. 61–64.

Problem 1

Griffiths 2.3 — Using the integral form of $\mathbf{E}$ given a (line) charge distribution. Carefully identify the "field point" $\mathbf{r}$, the vector that points to the charge location $\mathbf{r}'$ and the difference vector $\boldsymbol{\imath} \equiv \mathbf{r} - \mathbf{r}'$ and carry out the integral.

Problem 2

Griffiths 2.4 — Using the integral form of $\mathbf{E}$ given a (line) charge distribution. Here, you can use the known form of the electric field above the center of the line and superposition to avoid integrating.

Problem 3

Griffiths 2.5 — Using the integral form of $\mathbf{E}$ given a (line) charge distribution. Carefully identify the "field point" $\mathbf{r}$, the vector that points to the charge location $\mathbf{r}'$ and the difference vector $\boldsymbol{\imath} \equiv \mathbf{r} - \mathbf{r}'$ and carry out the integral.