Assignment 8

Physics 321
Electrodynamics I

Due on Friday, September 27th, 2024

Class date: September 20th 2024.
Reading: pp. 69–74.

Problem 1

Griffiths 2.12 — Using Gauss's law to find the electric field inside and outside of a spherical shell with uniform density.

Problem 2

Griffiths 2.18 — Gauss's law example for planar symmetry (find the electric field for points both inside and outside of the slab, and reflect that transition in your plot).

Problem 3

An infinite cylinder of radius R has volume charge density $\rho = \alpha(s - R/2)(s - R)$. What is the electric field inside and outside the cylinder?