

PHYSICS 110A, WINTER 2017
ELECTRICITY AND MAGNETISM

Assignment Four, Due Saturday, February 10, 5:00 pm.

- [1.] Find the potential at the point $(0, 0, z)$ due to three charges: $+q$ at $(0, a, 0)$, $+q$ at $(0, -a, 0)$, and $-2q$ at $(0, 0, -b)$. Using Coulomb's law, obtain the electric field \mathbf{E} . Can you get \mathbf{E} from the potential? If yes, does it agree with Coulomb's law?
- [2.] How much work does it take to assemble the charge distribution of problem [1.]?
- [3.] Griffiths Problem 25, Chapter 2.
- [4.] Griffiths Problem 27, Chapter 2.
- [5.] Griffiths Problem 30, Chapter 2.
- [6.] Griffiths Problem 34, Chapter 2.
- [7.] Griffiths Problem 39, Chapter 2.
- [8.] Griffiths Problem 43, Chapter 2.