EE331 — Homework #9 / Due Wednesday, Mar. 25, 2020 **at the beginning of class**

Notes: (1) Assume all charges and charge densities are located in free space so that $\varepsilon = \varepsilon_0 = 8.854 \times 10^{-12}$ F/m. (2) Make a sketch of the charge configuration; this is *very* helpful. Note the location of **r** as well. (3) Exploit symmetry whenever possible.

1. Ch. 4, Prob. 4.4.

2. Ch. 4, Prob. 4.13.

3. Line $(-2, y, 2)$ carries a charge of 10 nC/m while plane $z = -2$ carries a charge of 4 nC/m^2. Find the value of the electric field at the origin due to these charges.