Homework 3 **Due:** Start of class, September 28th

1. Griffiths Problem 3.9 (4th Edition; called 3.8 in the 3rd Edition) **[3pts]**
   Hints: Note that this isn't quite the same as what we worked through in class. However, since that single image charge case also works, the answer to this problem will be a superposition of that solution to one for another image charge. For the second charge, keep in mind the constraints of charge neutrality and the requirement of an equipotential at r=R. For calculating $\vec{F}$, feel free to quote results from the calculation in lecture, when necessary.

2. Griffiths Problem 3.11 (4th Edition; called 3.10 in the 3rd Edition) **[4pts]**
   Hints: Note that the image charge method relies on symmetry. Also note the constraint that the potential must be zero on the conductor wedge's faces.

3. Griffiths Problem 3.13 (4th Edition; called 3.12 in the 3rd Edition) **[6pts]**
   Hints: If $f(y) = \begin{matrix} b \ for\ 1 < y < 2 \\ a\ for\ 0 < y < 1 \end{matrix}$, then $\int_0^2 f(y)dy = \int_0^1 ady + \int_1^2 bdy$. Stop once you have solved for the only non-zero coefficient B_n in terms of some function $f(n)$, so long as $f(n)$ does not contain any un-evaluated integrals.