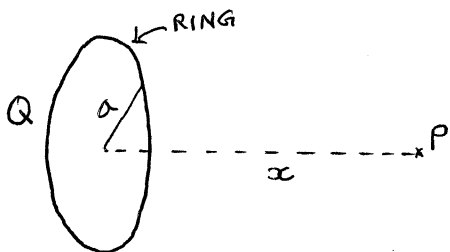


PHY 212 General Physics II - Electricity, Magnetism and Light
Summer 2007

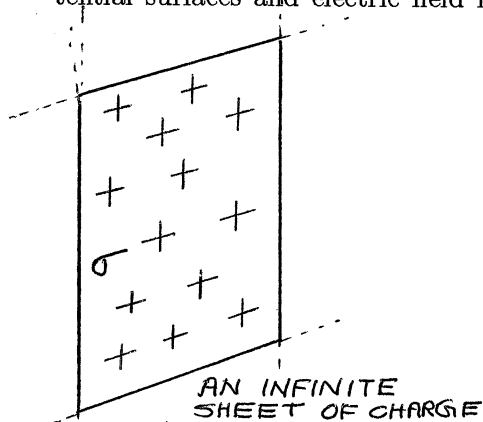
Quiz 3 Thursday, July 12

Name:

1. (5 points) **Potential Due to a Ring of Charge** Electric charge is distributed uniformly around a thin ring of radius a , with total charge Q . Find the potential at point P on the ring axis at a distance x from the center of the ring. (Hint: $V = \frac{1}{4\pi\epsilon_0} \int \frac{dq}{r}$)



2. (5 points) **Equipotential Surfaces and Electric Field Lines** Draw equipotential surfaces and electric field lines for the charge distribution given below:



3. (5 points) In a certain region of space the potential is given by $V(x, y, z) = A + Bx + Cy^2 + Dz^3$, where A, B, C and D are constants. What is the electric field in this region? (Hint: $\vec{E} = -\vec{\nabla}V$)