## **Problems of the Week 3**

Always show your work to receive credit (NO WORK=NO CREDIT)1. Calculate the electric field at the point P on the axis of the annulus shown below, which has surface charge density  $\sigma = \sigma_0 r$ .



2. Calculate the electric potential at the point P on the axis of the annulus shown below, which has surface charge density  $\sigma = \sigma_0 r$ .

3. Use the result of problem 2 and the fact that E=-dV/dx to calculate the electric field at the point P. To receive one point on this problem verify, that your answer here is the same as in problem 1.