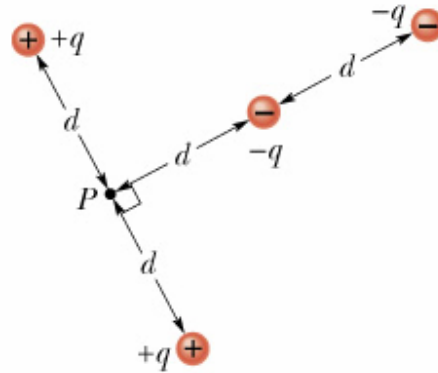


Homework for Chapter 24, section 2
Due 9/10/2007 Monday

9/4/2007

1. An infinite nonconducting sheet has a surface charge density $\sigma = 0.10 \mu\text{C}/\text{m}^2$ on one side. How far apart are equipotential surfaces whose potentials differ by 50 V?

2. In the right figure, what is the net electric potential at point P due to the four particles if $V = 0$ at ∞ . $q = 4.00 \text{ fC}$, and $d = 5.00 \text{ cm}$?



3. A Gaussian sphere of radius 4.00 cm is centered on a ball that has a radius of 1.00 cm and a uniform charge distribution. The total (net) electric flux through the surface of Gaussian sphere is $+5.60 \times 10^4 \text{ N}\cdot\text{m}^2/\text{C}$. What is the electric potential 12.0 cm from the center of the ball?

4. A nonuniform linear charge distribution given by $\lambda = bx$, where b is a constant, is located along an x axis from $x = 0$ to $x = 0.20\text{m}$. If $b = 20 \text{ nC}/\text{m}^2$ and $V = 0$ at infinity, what is the electric potential at (a) origin and (b) the point $y = 0.15\text{m}$ on the y axis?