PHYS 1220-02 Group Work Sheet
Electric charge

Some useful physical constants

Coulomb constant	$8.9876\times10^{9}\ \mathrm{N\cdot m^2/C^2}$
Elementary charge	$1.6022\times10^{-19}\ \mathrm{C}$
Mass of electron	$9.109\times10^{-31}\ \mathrm{kg}$
Bohr radius	$5.29\times10^{-11}\ \mathrm{m}$

1. The Bohr radius is the average distance between the nucleus and electron in a hydrogen atom. What is the acceleration of the electron at the Bohr radius?

2. Approximating the charge distributions on the balloon and fur as point charges, what is the magnitude of the separated charges?