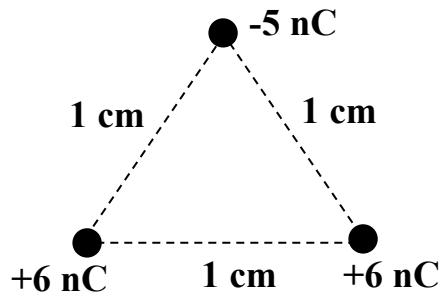
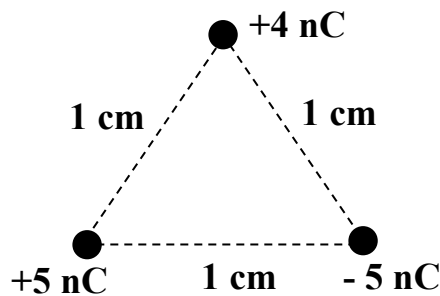


Physics 2212
Homework 3 (due: January 24)

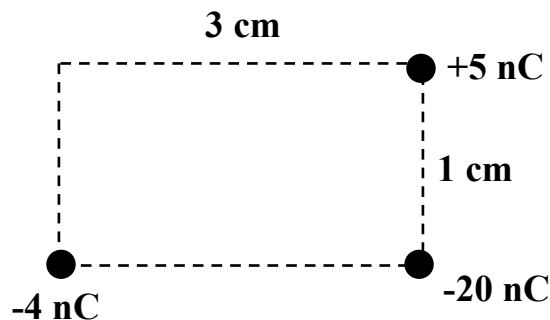
1. A plastic rod is charged to -90 nC by rubbing. How many electrons have been added to the rod?
2. Two identical metal spheres A and B are connected by a metal rod. Both are initially neutral. 5.0×10^{10} electrons are added to sphere A, then the connecting rod is removed. Afterward, what are the charge of sphere A and the charge of sphere B.
3. Two 5.0 g spheres are charged equally and placed 4.0 cm apart. When released, they begin to accelerate at 2 m/s^2 . What is the magnitude of the charge on each sphere?
4. What is the magnitude of the force on -5 nC charge?



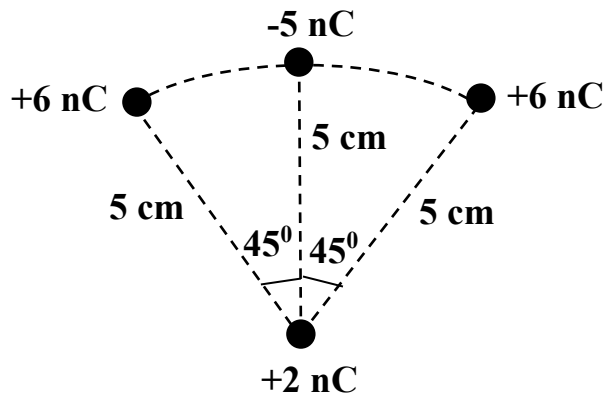
5. What is the magnitude of the force on 4 nC charge?



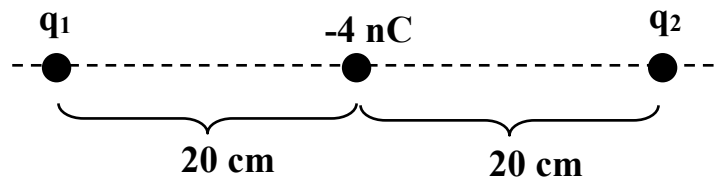
6. What is the magnitude of the force on -20 nC charge?



7. What is the magnitude of the force on the 2 nC charge?



8. Charge q_2 is in static equilibrium. What is q_1 ?



9. Two 5.0 g spheres on 2.0-m -long threads repel each other after being equally charged. What is the charge q ?

