1. Two identical, electrically isolated conducting spheres A and B are separated by a distance a that is large compared to the sphere. Sphere A has a positive charge +Q and sphere B is electrically neutral. Initially there is no electrostatic force between the spheres (assuming no induced charge on B due to their large separation). Suppose they are connected for a moment by a conducting wire and the wire is thin enough so that the charge distribution on it is negligible. What will be the electrostatic force between A and B after the wire is removed?

2. In the problem above, suppose sphere A is gounded momentarily, and then the ground connection is removed. What now is the electrostatic force between them? Why?