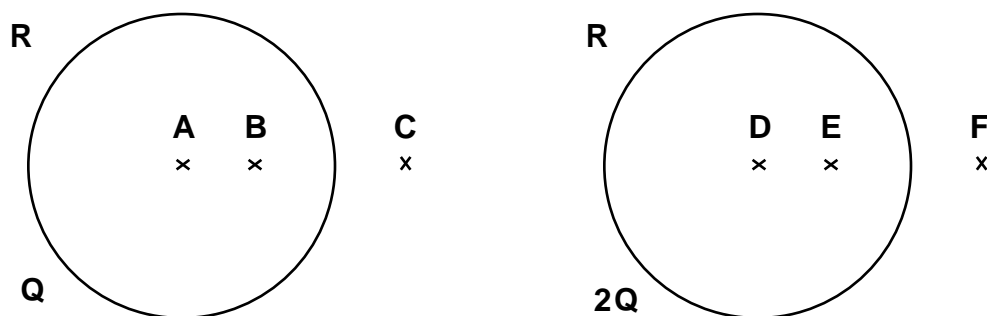


Charged Conducting Spheres—Electric Potential at Various Points¹³²

Shown below are two hollow spheres made of an electrically conducting material such as copper. On these spheres there is a different charge on each, as given in the figure, which is distributed evenly over the sphere. Each figure or sphere is independent of the others (they do not affect each other).

Rank these situations, from greatest to least, on the basis of the electric potential at the following points: **A** and **D**, which are inside the sphere at the center of the spheres; **B** and **E**, which are inside the sphere at a distance of $R/2$ from the center of the spheres; and **C** and **F**, which are outside the sphere at a distance of $3R/2$ from the center of the spheres.



Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ Least

Or, the electric potential is the same for these cases (but not zero). _____

Or, the electric potential is zero for these cases. _____

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed

Sure

Very Sure

1 2 3 4 5 6 7 8 9 10

¹³² C. Hieggelke, T. O’Kuma