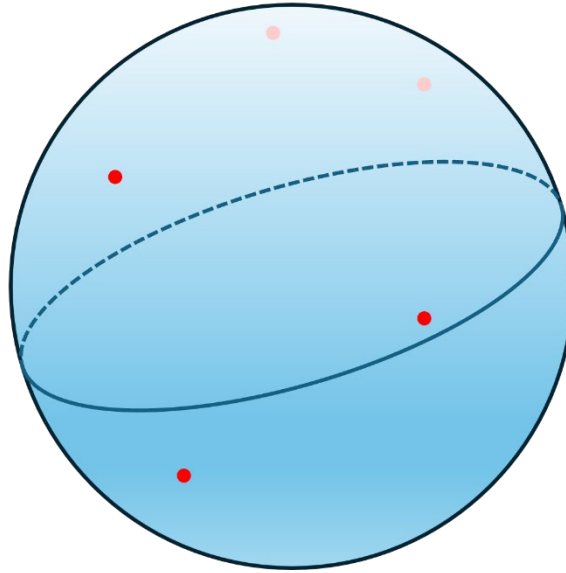


UC Merced Applied Math Problem of the Month

October 2024



Suppose that 5 points are randomly located on a sphere (i.e. the surface of a ball). (1) When you cut the sphere into two half-spheres without seeing it (i.e. randomly), what is the probability that one of the half-spheres has at least 4 points in its interior or boundary? (2) Now you are allowed to check where the points are. Can you always find a way to cut the sphere into two half-spheres so that one of them has at least 4 points in its interior or boundary? Otherwise, what is the probability of being able to do so?

To submit your solutions for a chance to win an Amazon gift card, and to find out detailed contest rules,

- scan the QR code, or
- go to <https://bit.ly/UCM-POTM>

