FAQ's

1. Define a sphere mathematically and give its equation.

   Answer:

   A sphere is the locus of a point which remains at a constant distance from a fixed point. The fixed point is called the center and the constant distance the radius the radius of the sphere.

   The equation of the sphere whose center is (a,b,c) and radius r is $(x-a)^2+(y-b)^2+(z-c)^2=r^2$.

2. List the uniqueness is general equation of a sphere

   Answer:

   The general equation of a sphere is such that

   I. It is the second degree in x,y,z
   II. The co-efficient of x^2,y^2,z^2 are equal
   III. There are no terms containing yz,zx or xy.

3. What is called great circle?

   Answer:

   Section of a sphere by a plane is a circle and the section of a sphere by a plane through its center is called a great circle.

4. What is the condition for a plane to touch a sphere?

   Answer:

   The condition for a plane (or a line) to touch a sphere is that the perpendicular distance of the center from the plane (or the line) is equal to the radius of the sphere.

5. What do you mean orthogonal sphere?

   Answer:

   Two spheres are said to cut orthogonally if the tangent planes at a point of intersection are at right angle. Two spheres cut orthogonally if the square of the distance between their center is equal to sum of the squares of their radii.