Surface Area of a Sphere (Theorem 12.11)	The surface area S of a sphere with radius r is $$S = 4\pi r^2$$	

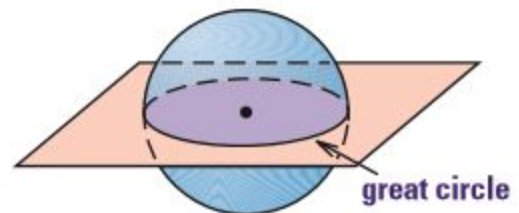1. Find the surface area of the spheres below: Do the surface areas double?
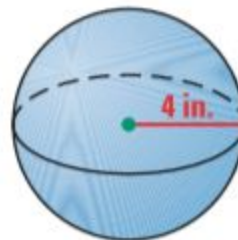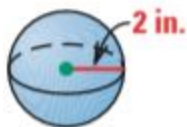
When a plane intersects a sphere the intersection is:
   1.
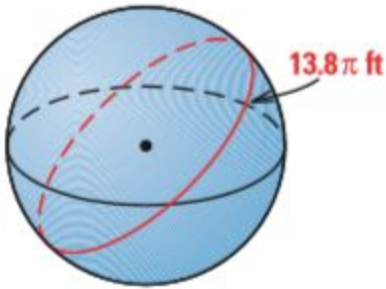
   2.

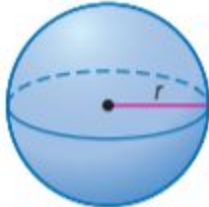If the intersection is contains the center of the sphere the intersection is a _____

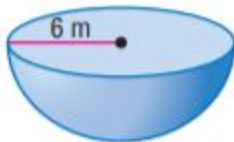Great circle cuts the sphere into

2. The circumference of a great circle of the sphere below is 13.8π feet. What is the surface area of the sphere?

13.8 π ft

Volume of a Sphere (Theorem 12.12)	The volume V of a sphere with a radius r is $V = \frac{4}{3}\pi r^3$	

3. Find the volume of each sphere or hemisphere below:
    a.

    6 m

    b.

    22 cm

4. A sphere with a great circle circumference is 18π cm. Find the volume of the sphere.

    $C = 18\pi$ cm
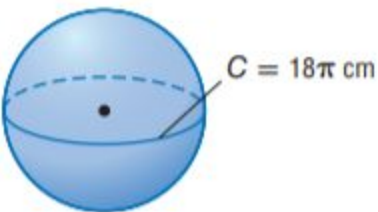
5. Find the volume of the hemisphere given that the diameter is 16 cm.

6. Find the volume of the sphere given that the area of the great circle is $55\pi \ in^2$.