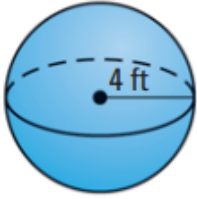


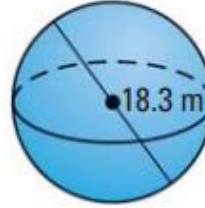
Unit 12- Worksheet #6: Surface Area and Volume of Spheres

Find the surface area and volume of the sphere. Round your answer to the nearest hundredth.

1.



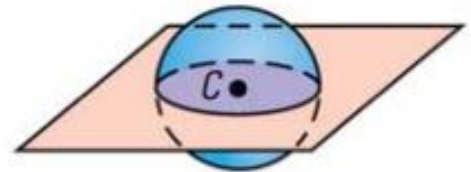
2.



In exercises 3-5, use the sphere below. The center of the sphere is C and its circumference is 9.6π inches. Round your answer to the nearest hundredth.

3. Find the radius of the sphere.

4. Find the surface area of one hemisphere.



5. Find the volume of sphere C.

6. Describe and correct the error in finding the surface area of a hemisphere with radius 5 feet

$$\begin{aligned}
 S &= 4\pi r^2 \\
 &= 4\pi(5)^2 \\
 &= 100\pi \\
 &\approx 314.16 \text{ ft}^2
 \end{aligned}$$

7. Describe and correct the error in finding the volume of a sphere with diameter 16 feet.

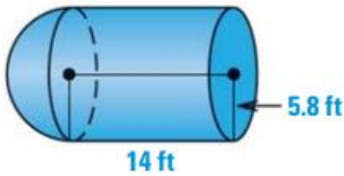
$$\begin{aligned}
 V &= \frac{4}{3}\pi r^2 \\
 &= \frac{4}{3}\pi(8)^2 \\
 &= 85.33\pi \approx 268.08 \text{ ft}^2
 \end{aligned}$$

Find the radius of a sphere with the given measure. Round your answer to the nearest hundredth.

8. $SA=32\pi \text{ m}^2$

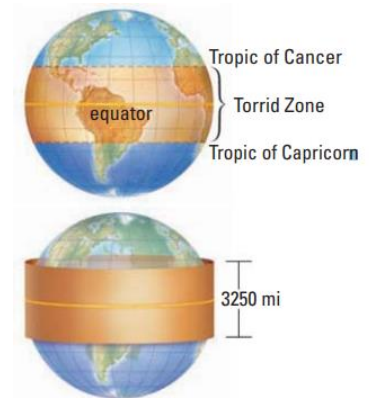
9. $V= 1436.76 \text{ m}^3$

10. Find the surface area and the volume of the solid. The cylinders and cones are right. Round your answer to the nearest hundredth.



11. The Torrid Zone on Earth is the area between the Tropic of Cancer and the Tropic of Capricorn, as shown. The distance between these two tropics is about 3250 miles. You can think of this distance as the height of the cylindrical belt around Earth at the equator, as shown.

a.) Estimate the surface area of the Torrid Zone and the surface area of Earth (Earth's radius ≈ 3963 miles).



b.) A meteorite is equally likely to hit anywhere on Earth. Estimate the probability that a meteorite will land in the Torrid Zone.