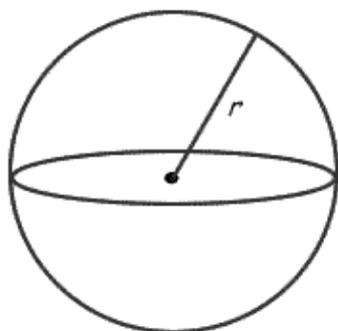


Sphere

Surface Area

$$A = 4\pi r^2$$



Volume

$$V = \frac{4}{3}\pi r^3$$



Example 1

Determining the Surface Area of a Sphere

The diameter of a baseball is approximately 3 in.

Determine the surface area of a baseball to the nearest square inch.



$$\begin{aligned} A &= 4\pi r^2 \\ &= 4\pi (1.5)^2 \\ &= 28.3 \text{ in}^2 \end{aligned}$$

Example 2**Determining the Diameter of a Sphere**

The surface area of a lacrosse ball is approximately 20 square inches.

What is the diameter of the lacrosse ball to the nearest tenth of an inch?

$$A = 20 \text{ in}^2$$

$$4\pi r^2 = 20$$

$$r^2 = \frac{20}{4\pi}$$

$$r = \sqrt{\frac{20}{4\pi}}$$

$$= 1.26 \text{ in}$$

$$d = 2(1.26)$$

$$= 2.52 \text{ in}$$

CHECK YOUR UNDERSTANDING

The surface area of a soccer ball is approximately 250 square inches.

What is the diameter of a soccer ball to the nearest tenth of an inch?

$$A = 250 \text{ in}^2$$

$$19.89 \times 0.5$$

$$4\pi r^2 = 250$$

$$r = \sqrt{\frac{250}{4\pi}}$$

$$= 4.5 \text{ in}$$

$$d = 2(4.5 \text{ in})$$

$$= 9.0 \text{ in}$$



Worksheet

Surface Area of Cones and Spheres