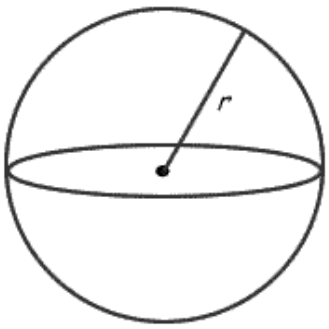
Sphere

Surface Area

$A = 4\pi r^2$



Volume

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

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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.

$A = 4\pi r^2$

$= 4\pi (1.5)^2$

$= 28.3 in^2$

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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?

$A = 4\pi r^2$

$4\pi r^2 = A$

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

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

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

$= 1.3 \text{ in}$

$d = 2(1.3)$

$= 2.6 \text{ in}$

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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?

$A = 4\pi r^2$

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

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

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

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

$= 4.5 \text{ in}$

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

$= 9 \text{ in}$

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Worksheet

Surface Area of Cones and Spheres

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