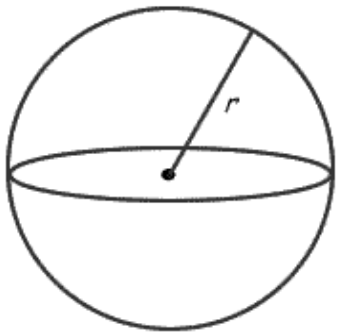
Sphere

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.

$A = 4\pi r^2$

$= 4\pi (1.5)^2$

$= 28.3 \text{ in}^2$

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?

$A = 4\pi r^2$

$4\pi r^2 = A$

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

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

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

$= 1.3 \text{ in}$

$\text{diameter} = 2r$

$= 2(1.3)$

$= 2.6 \text{ in}$

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?

$A = 4\pi r^2$

$\frac{4\pi r^2}{4\pi} = \frac{250}{4\pi}$

$r^2 = \frac{250}{4\pi}$

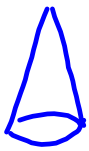
$r = \sqrt{\frac{250}{4\pi}}$

$= 4.5 \text{ in}$

$\text{diameter} = 2r$

$= 2(4.5)$

$= 9 \text{ in}$



$A = \pi r^2 + \pi r s$

Remember from last day!

Class / Homework

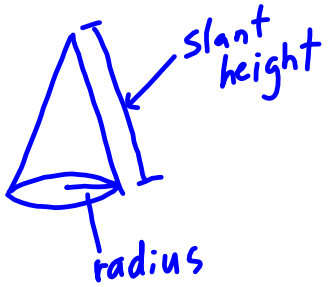
Worksheet

Surface Area of Cones and Spheres

1. a) i) $S = \pi r^2 + \pi r s$ (slant height, radius; Surface Area)

ii) $A = 4\pi r^2$ (radius)

b)



2. a) $A = \pi r^2$
$= \pi (8)^2$
$= 64\pi$

b) $A = \pi r s$
$= \pi (8)(17)$
$= 136\pi$

c) $A = 64\pi + 136\pi$
$= 200\pi$
$\approx 628.3 \text{ cm}^2$

3. a) $A = \pi r^2 + \pi r s$
$=$