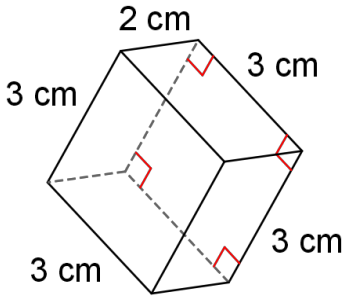
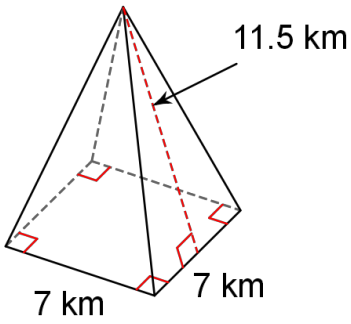
Warm Up:

Find the volume of each shape below:

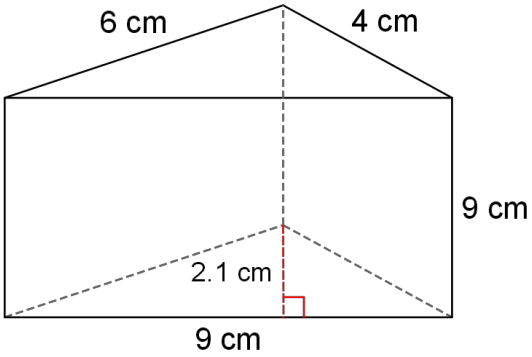
1.



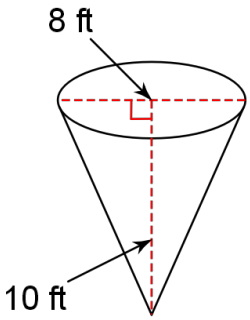
2.



3.



4.



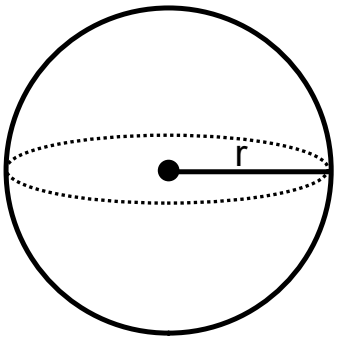
Learning Goal: Today I will learn how to find the volume of a sphere.

Success Criteria: I am able to use the volume of a sphere to solve problems.

11-6 Volume of Spheres

Burrito Books

Volume of a Sphere..... 20-21



Volume of a Sphere

- ~~all points are equidistant from a given point or center~~

Volume

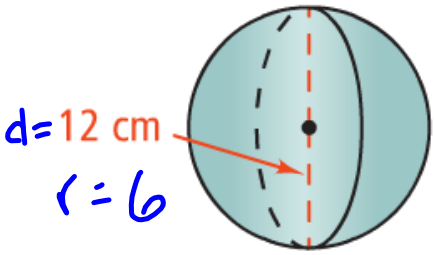
$V=\frac{4}{3}\pi r^3$

r = radius of sphere

Find the volume.

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

$V = \frac{4}{3}(3.14)\,6^3$



$V = 4/3 * \pi * 6 \wedge 3$

$V = 904.78\,cm^3$

The sphere at the right fits snugly inside a cube with 6-in. edges. What is the approximate volume of the space between the sphere and cube?

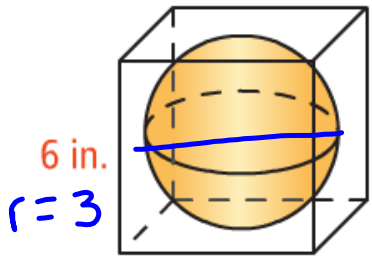
Cube − Sphere

$V = 6 \cdot 6 \cdot 6$ $V = \frac{4}{3}\pi r^3$

$V = 216$ $V = \frac{4}{3}\pi 3^3$

$V = 113.1$

$216 - 113.1 = 102.9$



Food An ice cream vendor presses a sphere of frozen yogurt into a cone, as shown at the right. If the yogurt melts into the cone, will the cone overflow? Explain.

Sphere

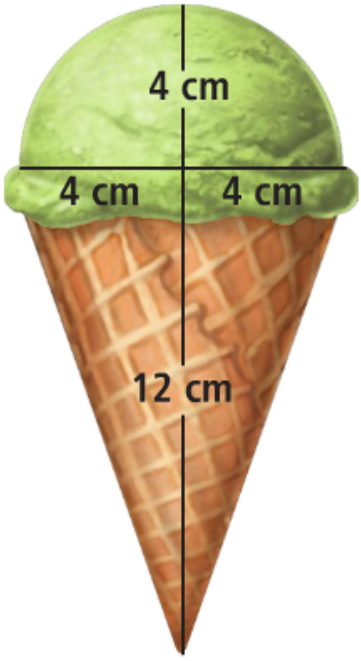
$\frac{4}{3}\pi 4^3$

268

Cone

$\frac{1}{3}\pi 4^2 \cdot 12$

201



Think About a Plan A cylindrical tank with diameter 20 in. is half filled with water. How much will the water level in the tank rise if you place a metallic ball with radius 4 in. in the tank? Give your answer to the nearest tenth.

A circle with an area of $81\pi cm^2$ is rotated around the x axis to form a sphere. What is the volume of the sphere?

Closure: Today I learned how to find the volume of a sphere.