LESSON DIGITS 13-5/13-6
Spheres

4/23/2019

Goal: I will be able to **find the volume and surface area of spheres**

Tool Bag Formulas, equations, Vocabulary, etc	Here's How ...Notes & Examples Standard MG 2.1 – Use formulas to find volume and surface area of three dimensional shapes.
What is a sphere?	What are some examples of spheres in real life? earth, basketball,
	Sphere (Center, Radius)  Hemisphere (Great Circle) 
Discuss with your partner	Given a sphere filled with water the same size as a cylinder, how much will it fill the cylinder? 

CYLINDER

Volume

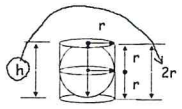
$V = \frac{2}{3}$ Volume of a Cylinder

$= \frac{2}{3}(\text{Circle Area} \cdot \text{height})$

$= \frac{2}{3}(\pi r^2 \cdot 2r)$

$= \frac{2}{3}(2\pi r^3)$

$V = \frac{4}{3}\pi r^3 = \frac{1}{3}(4\pi r^3)$



Surface Area

$= 4\pi r^2$

Example #1 Find the volume and surface area of the sphere:

$2^3 = 2 \cdot 2 \cdot 2 = 8$

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

$= \frac{4}{3}(\pi 2^3)$

$= \frac{4}{3}\pi 8$

$= \frac{32}{3}\pi \text{ in}^3$

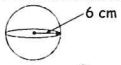
$SA = 4\pi r^2$

$= 4\pi 2^2$

$= 4\pi 4$

$= 16\pi \text{ in}^2$

You Try Find the volume and surface area of the sphere:



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

$= \frac{4}{3}\pi 6^3$

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

$= \frac{864}{3}\pi$

$= 288\pi \text{ cm}^3$

$3\overline{)864}$ 288, 6, 24, 24

$SA = 4\pi r^2$

$= 4\pi 6^2$

$= 4\pi 36$

$= 144\pi \text{ cm}^2$