


T, 5/30/06

**Notes #23: Surface Area and Volume of Spheres (Section 12.4)
Areas and Volumes of Similar Solids (Section 12.5)**

Spheres

	Total Area of a Sphere
	$A = 4\pi r^2$

Volume of a Sphere
$V = \frac{4\pi r^3}{3}$

Sketch each sphere. Then find the indicated values:

1. $r = 4$

2. diameter = 10

A = _____

A = _____

V = _____

V = _____

3. The area of a sphere is 64π . Find the radius and volume of the sphere.

4. The volume of a sphere is $\frac{500\pi}{3}$. Find the radius and area of the sphere.

r = _____

r = _____

V = _____

V = _____

A plane passes h cm from the center of a sphere with radius r . Find the radius and area of the circle of intersection, shaded in the diagram, for the given values.

5. $r = 5, h = 4$

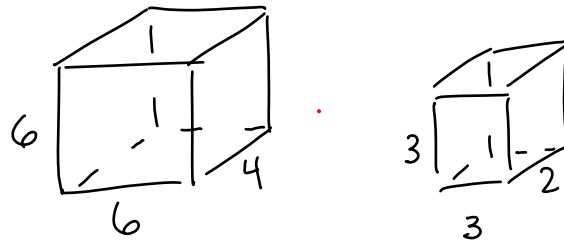
6. $r = 15, h = 12$



Areas and Volumes of Similar Solids

Similar Solids:

Given the two similar solids, find:



- (a) the ratio of their side lengths
- (b) the scale factor
- (c) the ratio of their base areas
- (d) the ratio of their total volumes

Complete:

If the scale factor of two similar solids is $a:b$, then

- The ratio of corresponding lengths (sides, bases, radii, perimeters) is _____
- The ratio of bases areas, lateral areas, or total areas is _____
- The ratio of volumes is _____

Complete the table below for two similar solids:

	7.	8.	9.	10.
Scale Factor	3:5			
Ratio of base perimeters				
Ratio of heights		2:1		
Ratio of lateral areas			4:9	
Ratio of total areas				
Ratio of volumes				27:64