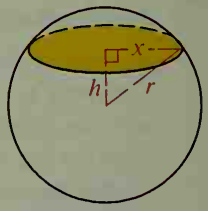
Classroom Exercises

Copy and complete the table for spheres.

	1.	2.	3.	4.	5.	6.
Radius	1	8	$3t$	?	?	?
Area	?	?	?	36π	100π	?
Volume	?	?	?	?	?	$\frac{4000\pi}{3}$

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



7. $r = 5$, $h = 3$

8. $r = 17$, $h = 8$

9. $r = 7$, $h = 6$

Written Exercises

Copy and complete the table for spheres.

A

	1.	2.	3.	4.	5.	6.	7.	8.
Radius	7	5	$\frac{1}{2}$	$\frac{3}{4}k$	?	?	$\sqrt{2}$	?
Area	?	?	?	?	64π	324π	?	?
Volume	?	?	?	?	?	?	?	288π

9. If the radius of a sphere is doubled, the area of the sphere is multiplied by ___?___ and the volume is multiplied by ___?___.

10. Repeat Exercise 9 if the radius of the sphere is tripled.

11. The area of a sphere is π cm^2. Find the diameter of the sphere.

12. The volume of a sphere is 36π m^3. Find its area.

13. Find the area of the circle formed when a plane passes 2 cm from the center of a sphere with radius 5 cm.

14. Find the area of the circle formed when a plane passes 7 cm from the center of a sphere with radius 8 cm.

15. A sphere has radius 2 and a hemisphere ("half" a sphere) has radius 4. Compare their volumes.

16. A scoop of ice cream with diameter 6 cm is placed in an ice-cream cone with diameter 5 cm and height 12 cm. Is the cone big enough to hold all the ice cream if it melts?

Ex. 16

17. Approximately 70% of the Earth's surface is covered by water. Use a calculator to find the area covered by water to the nearest million square kilometers. (The radius of the Earth is approximately 6380 km.)