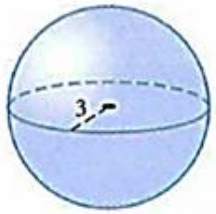
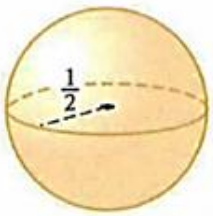
Geometry LT 7.1 Sphere Volume Practice **Name** _____

In Problems 1-3, find the volume of each solid. All measurements are in centimeters.

1.



2.



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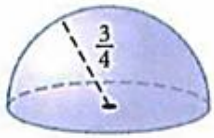


5. A sphere has volume $221\frac{5}{6}\pi$ cm^3. What is its diameter?

6. A sphere has a great circle circumference of 40π ft. What is its volume?

7. The area of the largest section of a sphere is 225π in.^{2}. What is its volume?

8. A sphere of ice cream is placed onto your ice cream cone. Both have a diameter of 8 cm. The height of your cone is 12 cm. If you push the ice cream into the cone, will all of it fit?

12. A sphere has a volume of 972π in.^{3}. Find its radius.

Astronomy **Use the table for Exercises 35–38.**

35. How many times as great is the volume of Jupiter as the volume of Earth?

36. The sum of the volumes of Venus and Mars is about equal to the volume of which planet?

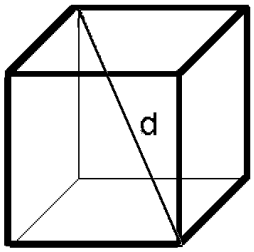
Planet	Diameter (mi)
Mercury	3,032
Venus	7,521
Earth	7,926
Mars	4,222
Jupiter	88,846
Saturn	74,898
Uranus	31,763
Neptune	30,775
Pluto	1,485

Challenge Problems:

8. A hemisphere has base area x cm^2 and volume x cm^3. What is its radius?

10. The space diagonal (d) is shown in the cube below.

a. If s represents an edge length of the cube, write an expression for the space diagonal in terms of s. Give the expression in simplest form.



b. If a sphere is circumscribed about the cube (so that the sphere goes through all 8 vertices of the cube), write an expression for the volume of the sphere in terms of s. Simplify the expression.