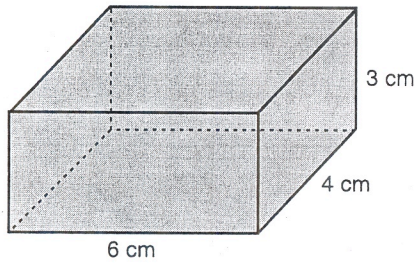


Practice

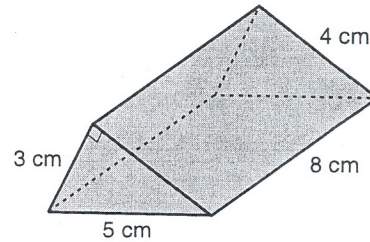
Surface Areas of Prisms and Cylinders

Find the lateral area and the surface area for each solid.
Round to the nearest tenth, if necessary.

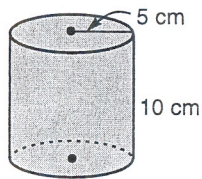
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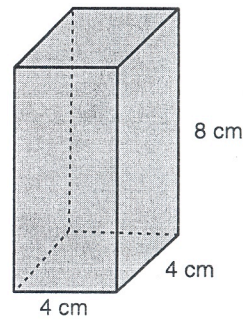
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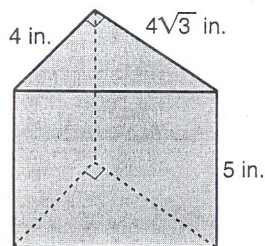
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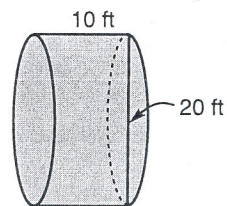
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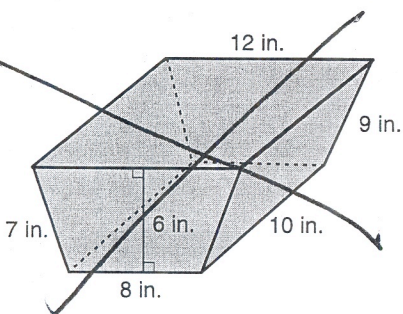
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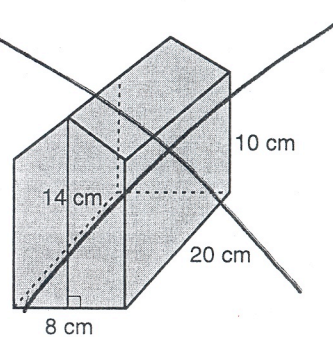
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7.



8.

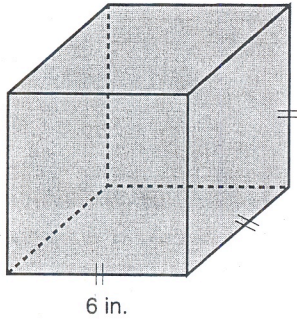


Practice

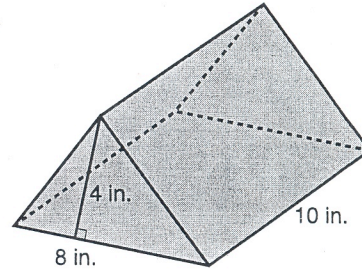
Volumes of Prisms and Cylinders

Find the volume of each solid. Round to the nearest tenth, if necessary.

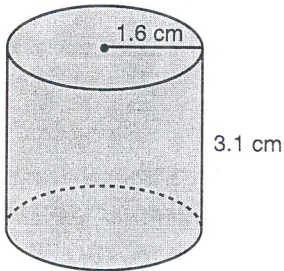
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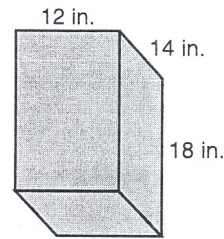
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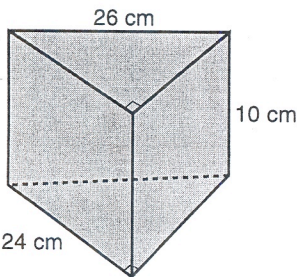
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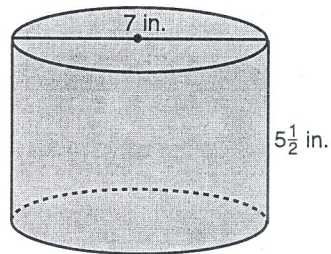
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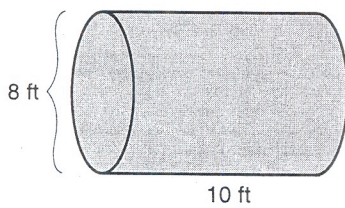
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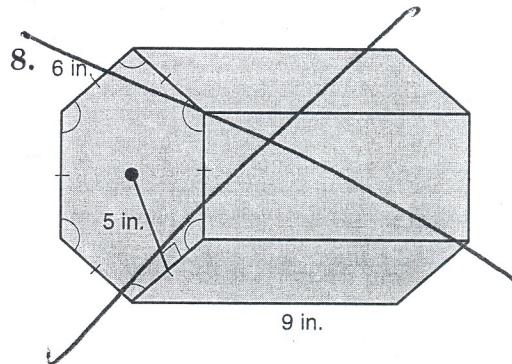
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7.



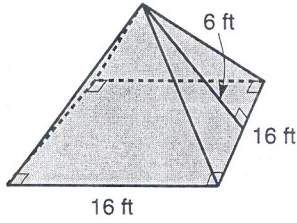
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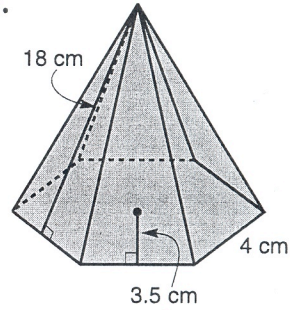
Surface Areas of Pyramids and Cones

Find the lateral area and the surface area of each regular pyramid or cone. Round to the nearest hundredth.

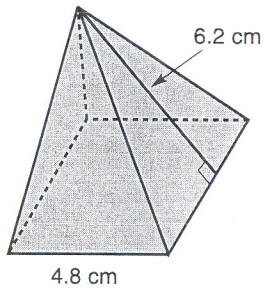
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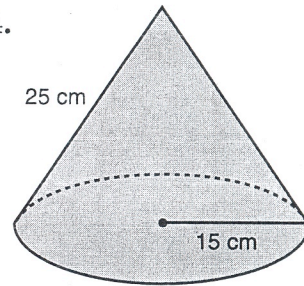
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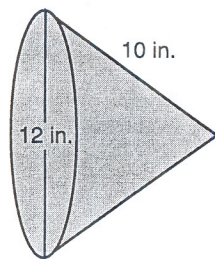
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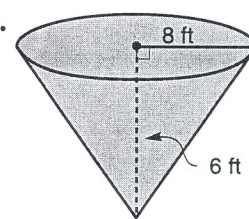
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5.



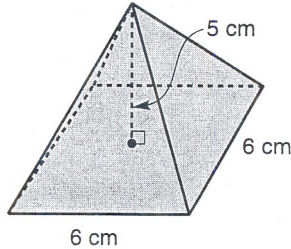
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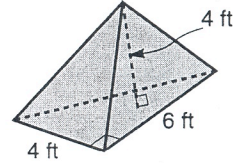
Volumes of Pyramids and Cones

Find the volume of each solid. Round to the nearest hundredth, if necessary.

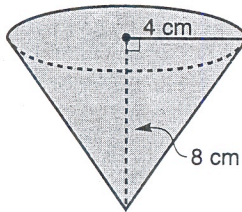
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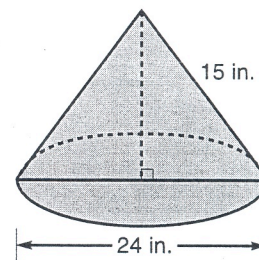
2.



3.



4.

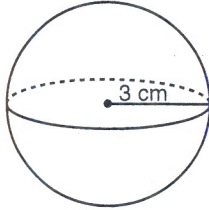


5. A pyramid has a height of 16 centimeters and a base with area of 84 square centimeters. What is its volume?
6. A cone has a height of 12 inches and a base with a radius of 16 centimeters. Find the volume of the cone.

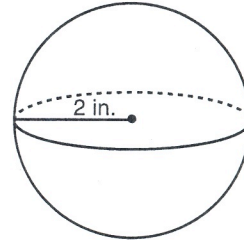
Spheres

Find the surface area and volume of each sphere.
Round to the nearest hundredth.

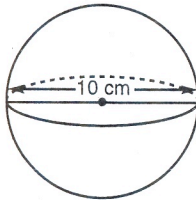
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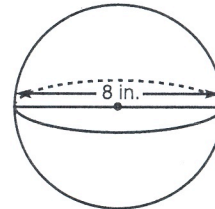
2.



3.



4.



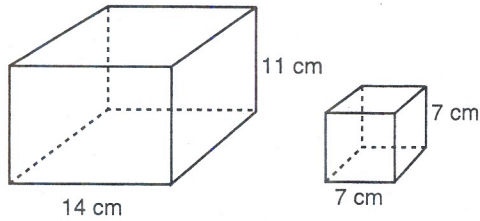
5. Find the surface area of a sphere with a diameter of 100 centimeters. Round to the nearest hundredth.
6. What is the volume of a sphere with a radius of 12 inches? Round to the nearest hundredth.

Practice

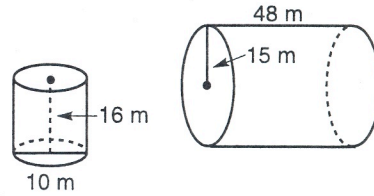
Similarity of Solid Figures

Determine whether each pair of solids is similar.

1.

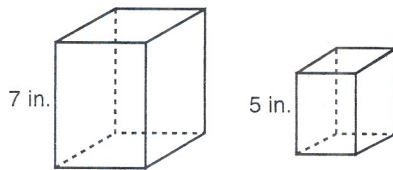


2.

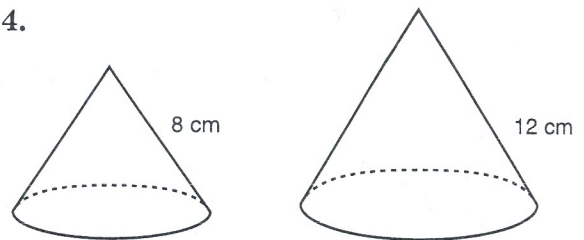


For each pair of similar solids, find the scale factor of the solid on the left to the solid on the right. Then find the ratios of the surface areas and the volumes.

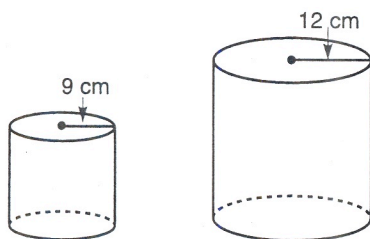
3.



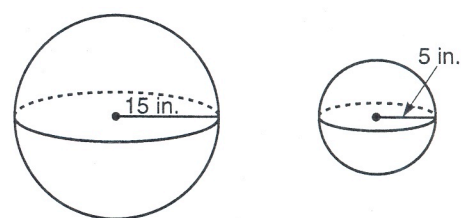
4.



5.

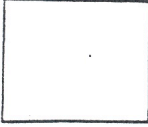
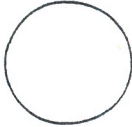


6.

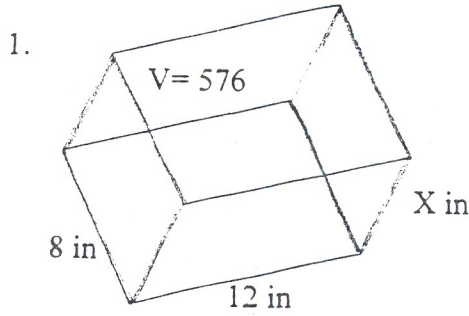


{ Right Prism (Boxes) & Cylinders } #2

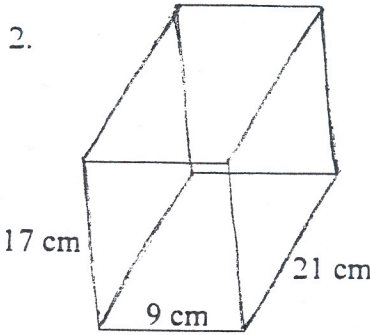
Name: _____
Date: _____ Block: _____

Formulas	Right Prism	Cylinder		
	$V =$ $SA =$	$V =$ $SA =$ $LA =$	Area = $L \cdot W$	Area = πr^2

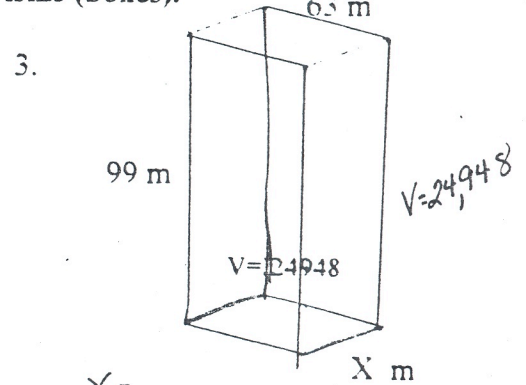
Find the missing measurement of the following right prisms (boxes). *then find volume & SA.*



$X =$ _____
 $V =$ _____ in^3 $SA =$ _____ in^2

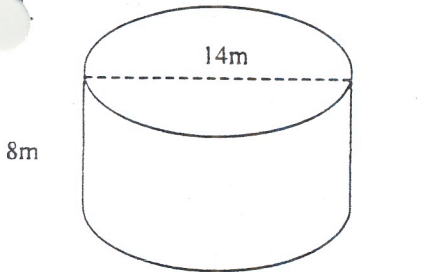


$V =$ _____ cm^3 $SA =$ _____ cm^2

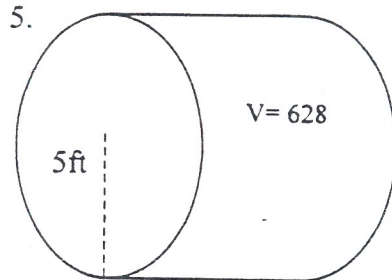


$X =$ _____
 $V =$ _____ m^3 $SA =$ _____ m^2

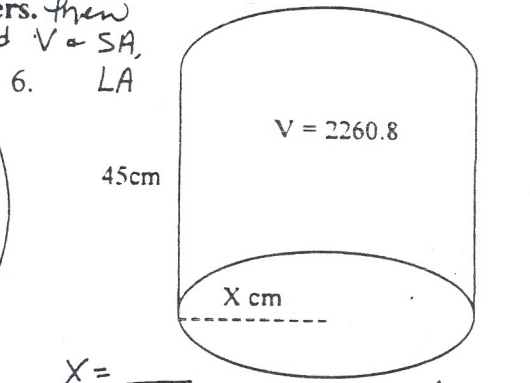
Find the missing measurements of the following cylinders. *then find V & SA.*



$LA =$ _____
 $V =$ _____ m^3 $SA =$ _____



$X =$ _____ X ft
 $V =$ _____ $SA =$ _____
 $LA =$ _____



$X =$ _____
 $V =$ _____ $SA =$ _____
 $LA =$ _____

Answer the following word problems. Draw a diagram & show all work on loose-leaf paper.

- Find the volume of a cylinder whose radius is 4 meters long and is 15 meters tall. _____
- Given a right prism is half full with water & the right prism has a base of 12in. length & a 13in. width and is 6in. tall. What is the amount (volume) of water in the prism? _____
- Find the height of a cylinder whose volume is 1356.48 cm^3 and has a radius of 6 cm. _____
- Find the length of the right prism with a height of 23 ft, a width of 17 ft & a volume of 3519 ft^3 _____
- The volume of a cylinder is 602.88 in^3 . If it has a height of 12 in then what is its radius? _____

Three Dimensional Figure Practice

1. What is the difference between surface area and volume? Name some key words to look for.
2. What is the difference between surface area and lateral area?

3. Find the volume of a triangular prism with a base area of 140 sq. cm. and height of 14 cm.
4. Find the surface area of a triangular prism with a base area of 140 sq. cm. and height of 14 cm.
5. How much air is in this tent: Its shape is a square pyramid, the sides of the base are 8 feet and the height is 9 feet.
6. How much canvas is needed to cover the tent including the floor?
7. Find the volume of a cone with a slant height of 15 cm and diameter 24 cm.
8. Find the surface area of a cone with a slant height of 15 cm and diameter 24 cm.
9. Find the volume of a square pyramid with a slant height of 10 cm and the sides of the base are 16 cm.
10. Find the volume of a cone with slant height of 14 cm and radius of 10 cm.
11. Find the volume of a regular hexagonal pyramid whose base area is 140 sq cm and height 14 cm.
12. Find the lateral area of a cone whose diameter is 14 cm and slant height is 14 cm.
13. Find the lateral area of a square pyramid whose height is 8 cm and base lengths are 12 cm.
14. How much paper is needed for a soup label if the radius of the can is 2 cm and the height is 6 cm?
(Did you use lateral area, surface area or volume??)
15. How much paper is needed to cover an ice cream cone if the diameter is 6 cm and the height is 4 cm?
(Did you use lateral area, surface area or volume??)
16. Find the volume of a sphere whose diameter is 10 cm.
17. Find the surface area of a sphere whose radius is 6 cm.
18. Find the volume of a hemisphere whose diameter is 10 cm.
19. Find the volume of a sphere whose great circle has area 100 square cm.
20. Find the surface area of a sphere whose great circle has area 144 square mm.
21. If the radius of a sphere is doubled, how does that affect its surface area?
22. If the radius of a sphere is doubled, how does that affect its volume?
23. If the volume of a cylinder had been increased by a factor of 27, by what factor was the height increased?
24. If the area of a sphere had been increased by a factor of 16, by what factor was the radius increased?
25. How much felt is needed to cover a tennis ball whose diameter is 5 cm?

26. How much air is in the tennis ball?
27. How much water is in an aquarium whose length, width and height are 2 feet, 3 feet and 1 foot?
28. How much paper is needed to cover a box 18 cm by 14 cm by 13 cm?
-
29. How much air is in a tent whose shape is a right triangular prism with base lengths 3, 4, and 5 feet and height of the prism is 6 feet?
30. How much canvas is needed to cover the above tent including the floor?
31. If we increase the height of the tent by a factor of 5, how did that affect the amount of air? Write the answer as a ratio.
32. If we increase the height of the tent by a factor of 5, how did that affect the amount of canvas? Write the answer as a ratio.
33. A standard drinking straw is 19.5 cm long and has a diameter of 0.6 cm. How many square centimeters of plastic is needed to make 10 straws? (remember that a straw is open on both ends)
34. A typical video cassette tape box is open on one side. It's dimensions are $7\frac{1}{2}$ in by 4 in by 1 in. How many square inches of cardboard are needed to produce one box?
35. An hourglass is made by connecting 2 glass cones inside of a glass cylinder. Which has more glass, the 2 cones (together) or the cylinder?
36. Suppose you were to climb to the top of the Great Pyramid in Egypt. Which route would be shorter: A route along the lateral edge or along the slant height? (the height of the pyramid is 481 ft, the edge of the square base is 756 feet)
37. An ice cream cone has height of 12 cm and diameter of 6 cm. The ice cream on top is a sphere with the same diameter. When the ice cream melts, will the ice cream cone be large enough to hold all of the melted ice cream?
38. How much less popcorn is in a conical container (with diameter 4 in. and height = 10 in.) than a cylindrical container with the same dimensions?
How much cardboard is needed to produce each container? Which one needs more cardboard?
39. A balloon has diameter = 14 in when it is fully inflated. Half of the air is let out of the balloon. Assuming that the balloon is a sphere, what is the new diameter?
40. A rectangular aquarium is filled with water to a height = 14.5. The length and width of the aquarium is 34 in by 12 in. When a rock is dropped into the aquarium, the height is increased by 2 inches. What is the volume of the rock?

Answers:

- | | | | | | |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 1. _____ | 2. _____ | 3. _____ | 4. _____ | 5. _____ | 6. _____ |
| 7. _____ | 8. _____ | 9. _____ | 10. _____ | 11. _____ | 12. _____ |
| 13. _____ | 14. _____ | 15. _____ | 16. _____ | 17. _____ | 18. _____ |
| 19. _____ | 20. _____ | 21. _____ | 22. _____ | 23. _____ | 24. _____ |
| 25. _____ | 26. _____ | 27. _____ | 28. _____ | 29. _____ | 30. _____ |
| 31. _____ | 32. _____ | 33. _____ | 34. _____ | 35. _____ | 36. _____ |
| 37. _____ | 38. _____ | 39. _____ | 40. _____ | | |