

Composite Volumes HW HONORS

Name: Key

Packaging and Shipping Tennis balls have a 3-inch diameter are sold in cans of three. The can is a cylinder.



1. What is the volume of one tennis ball?

$$14.14 \text{ in}^3$$

2. What is the internal volume (capacity) of the cylinder?

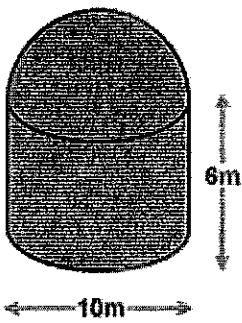
$$63.62 \text{ in}^3$$

3. Assume the balls touch the can on the sides, top and bottom. How much space is left over?

$$21.2 \text{ in}^3$$

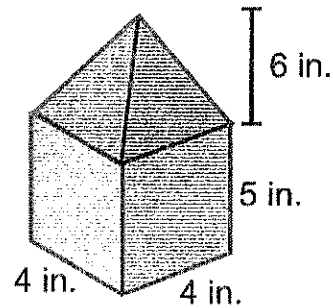
Find the volume of each composite shape.

4.



$$733.04 \text{ m}^3$$

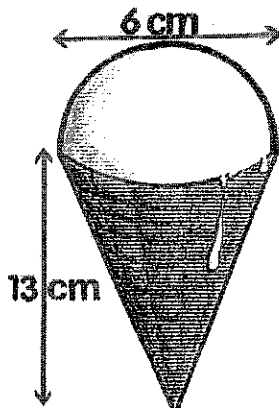
5.



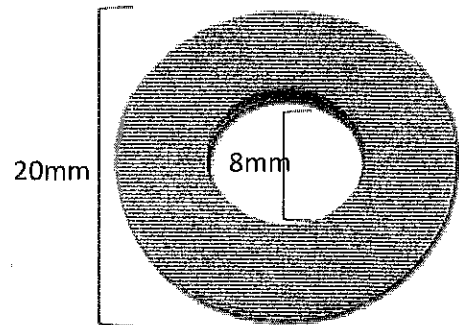
$$112 \text{ in}^3$$

6. The following ice cream cone is filled all the way to the bottom with ice cream. Find the volume of the ice cream.

$$179.07 \text{ cm}^3$$

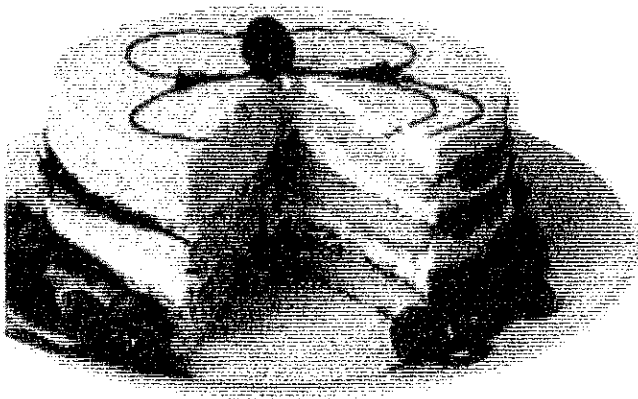


7. Find the volume of the following metal washer. It is 0.5mm thick.



$$131.95 \text{ mm}^3$$

The whole cake is 9 cm high and 20 cm across. Each layer of cake is 2 cm thick, and each layer is separated by 1 cm of frosting. Mmmm.....



8. What is the total volume of the entire cake (including the missing piece)?

$$2827.43 \text{ cm}^3$$

9. What is the volume of one layer of frosting (including the missing piece)?

$$314.16 \text{ cm}^3$$

10. What is the volume of all three layers of frosting? (including the missing piece)?

$$942.48 \text{ cm}^3$$

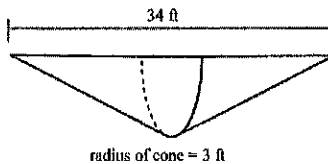
11. What is the volume of one layer of plain cake (without frosting) (including the missing piece)?

$$628.32 \text{ cm}^3$$

12. What is the volume of all three layers of plain cake, without the frosting (including the missing piece)?

$$1884.96 \text{ cm}^3$$

13. A cone has been split vertically down the center and the two pieces have been placed together at their bases to make a "canoe" shape. The length of the radius is 3 ft and the length of the canoe shape from end to end is 34 ft. What is the volume of the figure?



$$140.22 \text{ ft}^3$$

14. **Composite Figures** Use the diagram of the backpack at the right.

a. What two figures approximate the shape of the backpack?

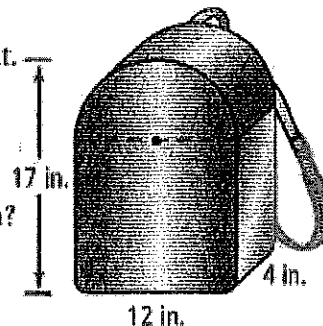
1/2 cylinder & a cube

b. What is the volume of the backpack in terms of π ?

528 in³ + 72 π

c. What is the volume of the backpack to the nearest cubic inch?

$$754.19 \text{ in}^3$$



15. The sphere at the right fits snugly inside a cube with 6-in. edges. What is the approximate volume of the space between the sphere and the cube?

A 28.3 in.³

B 76.5 in.³

C 102.9 in.³

D 113.1 in.³

