13-2 Enrichment

Chapter 13 Extra Credit
* Show all work to receive full credit *

Frustums

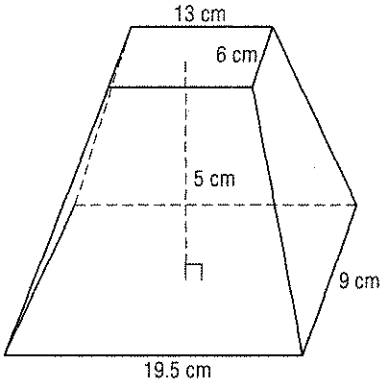
A **frustum** is a figure formed when a plane intersects a pyramid or cone so that the plane is parallel to the solid's base. The frustum is the part of the solid between the plane and the base. To find the volume of a frustum, the areas of both bases must be calculated and used in the formula

$$V = \frac{1}{3}h(B_1 + B_2 + \sqrt{B_1 B_2}),$$

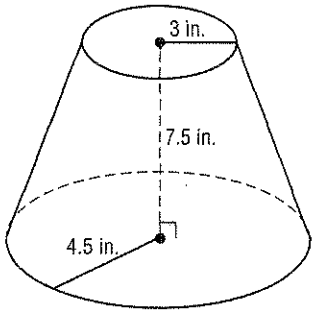
where h = height (perpendicular distance between the bases), B_1 = area of top base, and B_2 = area of bottom base.

Describe the shape of the bases of each frustum. Then find the volume. Round to the nearest tenth.

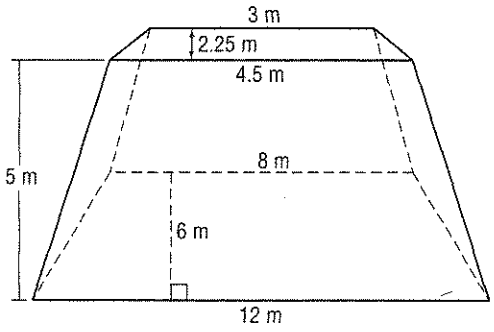
1.



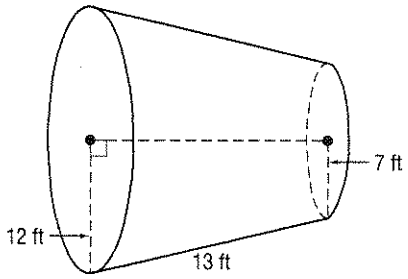
2.



3.



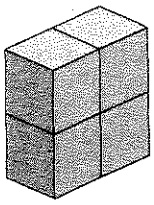
4.



Visible Surface Area

Use paper, scissors, and tape to make five cubes that have one-inch edges. Arrange the cubes to form each shape shown. Then find the volume and the visible surface area. In other words, do not include the area of surface covered by other cubes or by the table or desk.

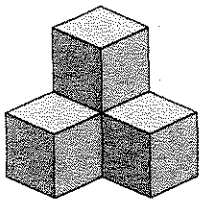
1.



volume =

surface area =

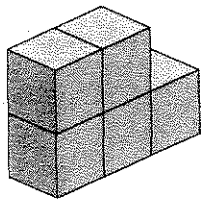
2.



volume =

surface area =

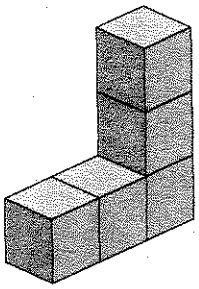
3.



volume =

surface area =

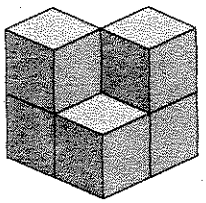
4.



volume =

surface area =

5.



volume =

surface area =

6. Find the volume and the visible surface area of the figure at the right.

volume =

surface area =