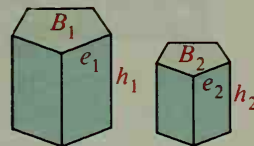
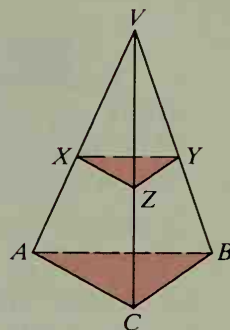


26. The bases of two similar right prisms are regular pentagons with base edges e_1 and e_2 and base areas B_1 and B_2 . The heights are h_1 and h_2 . Prove that the ratio of the lateral areas is $e_1^2 : e_2^2$.
27. Refer to Exercise 26. Prove that the ratio of the volumes of the prisms is $e_1^3 : e_2^3$.

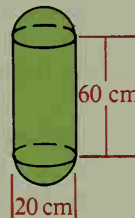


- C** 28. The purpose of this exercise is to prove that if plane XYZ is parallel to plane ABC , then $V\text{-}XYZ \sim V\text{-}ABC$. To do this, suppose that $VA = k \cdot VX$ and show that every edge of $V\text{-}ABC$ is k times as long as the corresponding edge of $V\text{-}XYZ$. (*Hint: Use Theorem 3-1.*)
29. A plane parallel to the base of a pyramid separates the pyramid into two pieces with equal volumes. If the height of the pyramid is 12, find the height of the top piece.



Self-Test 2

- Find the area and volume of a sphere with diameter 6 cm.
- The volume of a sphere is $\frac{32}{3} \pi \text{ m}^3$. Find the area of the sphere.
- The students of a school decide to bury a time capsule consisting of a cylinder capped by two hemispheres. Find the volume of the time capsule shown.
- Find the area of the circle formed when a plane passes 12 cm from the center of a sphere with radius 13 cm.
- One regular triangular pyramid has base edge 8 and height 6. A similar pyramid has height 4.
 - Find the base edge of the smaller pyramid.
 - Find the ratio of the total areas of the pyramids.
- The base areas of two similar prisms are 32 and 200, respectively.
 - Find the ratio of their heights.
 - Find the ratio of their volumes.



Ex. 3

Challenge

A pattern for a model is shown. Can you tell what it is? To build it, make a large copy of the pattern on stiff paper. Cut along the solid lines, fold along the dashed lines, and tape the edges together.

If you want to make a pattern for a figure, think about the number of faces, their shapes, and how the edges are related. Try to create and build models for a triangular prism, a triangular pyramid, and a cone.

