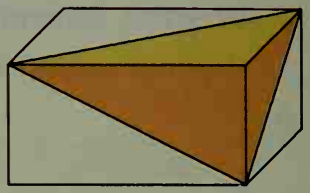
18. Find the height and the volume of a regular hexagonal pyramid with lateral edges 10 ft and base edges 6 ft.

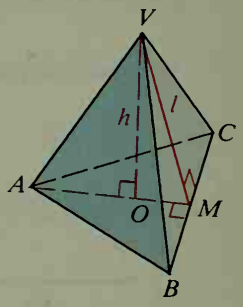
19. The shaded pyramid in the diagram is cut from a rectangular solid. How does the volume of the pyramid compare with the volume of the rectangular solid?



Ex. 19

20. A pyramid and a prism both have height 8.2 cm and congruent hexagonal bases with area 22.3 cm^2. Give the ratio of their volumes. (*Hint*: You do *not* need to calculate their volumes.)

Exercises 21–25 refer to the regular triangular pyramid shown below.



21. If $AM = 9$ and $VA = 10$, find h and l.

22. **a.** If $BC = 6$, find AM and AO.
b. If $BC = 6$ and $VA = 4$, find h and l.

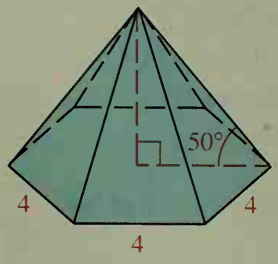
23. **a.** If $h = 4$ and $l = 5$, find OM, OA, and BC.
b. Find the lateral area and the volume.

24. If $VA = 5$ and $h = 3$, find the slant height, the lateral area, and the volume.

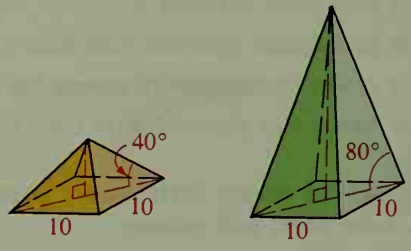
25. If $AB = 12$ and $VA = 10$, find the lateral area and the volume.

26. Find the volume of a regular hexagonal pyramid with height 8 cm and base edges 6 cm.

27. Use trigonometry to find the volume of the regular pyramid below to the nearest cubic unit.



Ex. 27



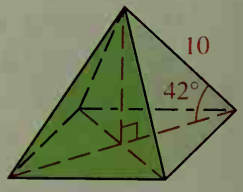
Ex. 28

28. Show that the ratio of the volumes of the two regular square pyramids shown above is $\frac{\tan 40°}{\tan 80°}$.

C **29.** All the edges of a regular triangular pyramid are x units long. Find the volume of the pyramid in terms of x.

30. The base of a pyramid is a regular hexagon with sides y cm long. The lateral edges are $2y$ cm long. Find the volume of the pyramid in terms of y.

31. Use a calculator and trigonometry to find the volume of the regular square pyramid shown to the nearest cubic unit.



Ex. 31