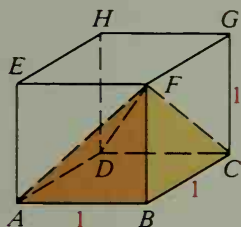
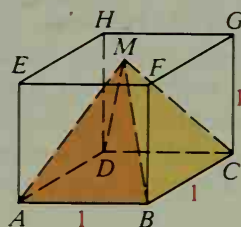


- ★ 32. Different pyramids are inscribed in two identical cubes, as shown below.
- Which pyramid has the greater volume?
 - Which pyramid has the greater total area?



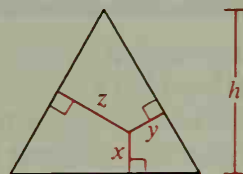
Pyramid $F-ABCD$



Pyramid $M-ABCD$ has vertex M at the center of square $EFGH$.

Challenge

- Accurately draw or construct a large equilateral triangle. Choose any point inside the triangle and carefully measure the distances x , y , z , and h . Then find $x + y + z$.
- Now choose another point on or inside the triangle and find $x + y + z$. What do you notice? Why does this happen?
- Use your answers in Exercises 1 and 2 to complete the following statement: From any point inside an equilateral triangle, the sum of the equals the .
- Generalize the statement in Exercise 3 from two dimensions to three dimensions.



Mixed Review Exercises

Copy and complete the table for circles.

	1.	2.	3.	4.	5.	6.	7.	8.
Radius	6	11	$\frac{1}{2}$	$3\sqrt{3}$?	?	?	?
Circumference	?	?	?	?	10π	18π	?	?
Area	?	?	?	?	?	?	49π	15π

Draw a diagram for each exercise.

- A circle is inscribed in a square with sides 24 mm. Find (a) the area of the circle and (b) the area of the square.
- A square is inscribed in a circle with diameter $8\sqrt{2}$. Find (a) the perimeter of the square and (b) the circumference of the circle.