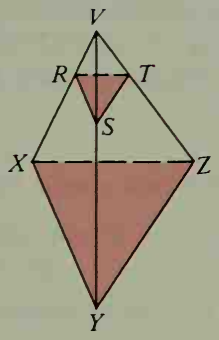
**13.** A sphere has radius 7 m. Use $\pi \approx \frac{22}{7}$ to find the approximate area of the sphere. 12–4

**14.** Find, in terms of $\pi$, the volume of a sphere with diameter 12 ft.

**15.** Find the volume of a sphere with area $484\pi$ cm$^2$.

**Plane *RST* ∥ plane *XYZ* and *VS*:*VY* = 1:3.**




**16.** $\frac{\text{perimeter of } \triangle RST}{\text{perimeter of } \triangle XYZ} = \underline{\ ?\ }$ 12–5

**17.** $\frac{\text{total area of small pyramid}}{\text{total area of large pyramid}} = \underline{\ ?\ }$

**18.** $\frac{\text{volume of small pyramid}}{\text{volume of bottom part}} = \underline{\ ?\ }$

**19.** Two similar cylinders have lateral areas $48\pi$ and $27\pi$. Find the ratio of their volumes.

# Chapter Test

**1.** Find the volume and the total area of a cube with edge $2k$.

**2.** A regular square pyramid has base edge 3 cm and volume 135 cm$^2$. Find the height.

**3.** A cone has radius 8 and height 6. Find the volume.

**4.** Find the lateral area and the total area of the cone in Exercise 3.

**5.** A right triangular prism has height 20 and base edges 5, 12, and 13. Find the total area.

**6.** Find the volume of the prism in Exercise 5.

**7.** A cylinder has radius 6 cm and height 4 cm. Find the lateral area.

**8.** Find the volume of the cylinder in Exercise 7.

**9.** A regular square pyramid has lateral area 60 m$^2$ and base edge 6 m. Find the volume.

**10.** A sphere has radius 6 cm. Find the area and the volume.

**11.** Two cones have radii 12 cm and 18 cm, and have slant heights 18 cm and 24 cm. Are the cones similar? Explain.

**12.** A regular pyramid has height 18 and total area 648. A similar pyramid has height 6. Find the total area of the smaller pyramid.

**13.** The volumes of two similar rectangular solids are 1000 cm$^3$ and 64 cm$^3$. What is the ratio of their lateral areas?

**14.** A cone and a cylinder each have radius 3 and height 4. Find the ratio of their volumes and of their lateral areas.

**15.** Find the volume of a sphere with area $9\pi$.

**16.** A cylinder with radius 7 has total area $168\pi$ cm$^2$. Find its height.