## Chapter Review

1. In a right prism, each ___?___ is also an altitude.

2. Find the lateral area of a right octagonal prism with height 12 and base edge 7.

3. Find the total area and volume of a rectangular solid with dimensions 8, 6, and 5.

4. A right square prism has base edge 9 and volume 891. Find the total area.

5. Find the volume of a regular triangular pyramid with base edge 8 and height 10.

6. A regular pentagonal pyramid has base edge 6 and lateral edge 5. Find the slant height and the lateral area.
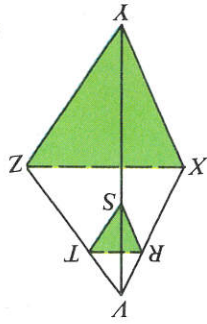
**A regular square pyramid has base edge 30 and total area 1920.**

7. Find the area of the base, the lateral area, and the slant height.

8. Find the height and the volume of the pyramid.

9. Find the lateral area and the total area of a cylinder with radius 4 and height 3.

10. Find the lateral area, total area, and volume of a cone with radius 6 cm and slant height 10 cm.

11. A cone has volume $8\pi$ and height 6. Find its slant height.

12. The radius of a cylinder is doubled and its height is halved. How does the volume change?

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

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

15. A plane intersects a sphere with radius 29, forming a circle with radius 21. Find the distance from the center of the sphere to the plane.

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

**Plane $RST \parallel$ plane $XYZ$ and $VS:VY = 1:3$.**

17. $\dfrac{\text{perimeter of } \triangle RST}{\text{perimeter of } \triangle XYZ} = \dfrac{?}{\underline{\quad}}$

18. $\dfrac{\text{total area of small pyramid}}{\text{total area of large pyramid}} = \dfrac{?}{\underline{\quad}}$

19. $\dfrac{\text{volume of small pyramid}}{\text{volume of bottom part}} = \dfrac{?}{\underline{\quad}}$



20. 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 pyramid has a rectangular base 10 cm long and 6 cm wide. The pyramid's height is 4 cm. Find the volume.

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 m² 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?

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 cm³ and 64 cm³. 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 $168\pi$ cm². Find its height.