NAME Key DATE _____ SCORE _____

Areas and Volumes of Solids

For use after Chapter 12

1. Find the lateral area, total area, and volume of a rectangular solid with length 5, width 6, and height 8.

   L.A. = 176, T.A. = 236, V = 240

2. Find the total area and volume of a cube with edge 9.

   T.A. = 486, V = 729

3. Find the total area of a cube with volume 64 cm^3 96

4. Find the lateral area, total area, and volume of a regular square pyramid with slant height 10 and height 6.

   L.A. = 320, T.A. = 576, V = 512

5. The base of a right prism is a triangle with sides 9, 12, and 15. The height is 10. Find the lateral area, total area, and volume.

   L.A. = 360, T.A. = 468, V = 540

6. Find the lateral area, total area, and volume of a cylinder with $r = 8$ and $h = 12$.

   L.A. = 192π, T.A. = 320π, V = 768π

7. Find the lateral area, total area, and volume of a cone with $r = 7$, $h = 24$, and $l = 25$.

   L.A. = 175π, T.A. = 224π, V = 392π

8. Find the area and volume of a sphere with radius 3 cm.

   A = 36π cm^2, V = 36π cm^3

9. Two cylinders have radii 8 cm and 9 cm. The heights are 12 cm and 15 cm. Are the cylinders similar? No

10. Two similar cones have volumes 8π and 64π. Find the ratios of the:

    a. radii 1:2 **b.** slant heights 1:2 **c.** lateral areas 1:4

11. Two spheres have radii 6 and 15. Find the ratios of the:

    a. areas 4:25 **b.** volumes 8:125

12. Find the area of the circle formed when a plane passes 3 cm from the center of a sphere with radius 5 cm. 16π cm^2

13. Two similar rectangular prisms have heights 6 and 20. If the smaller prism has total area 126, find the total area of the larger prism. 1400