

### Areas and Volumes of Solids

For use after Chapter 12

- Find the lateral area, total area, and volume of a rectangular solid with length 5, width 6, and height 8.  
L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_
- Find the total area and volume of a cube with edge 9.  
T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_
- Find the total area of a cube with volume  $64 \text{ cm}^3$  \_\_\_\_\_
- Find the lateral area, total area, and volume of a regular square pyramid with slant height 10 and height 6.  
L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_
- 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. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_
- Find the lateral area, total area, and volume of a cylinder with  $r = 8$  and  $h = 12$ .  
L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_
- Find the lateral area, total area, and volume of a cone with  $r = 7$ ,  $h = 24$ , and  $l = 25$ .  
L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_
- Find the area and volume of a sphere with radius 3 cm.  
 $A =$  \_\_\_\_\_,  $V =$  \_\_\_\_\_
- Two cylinders have radii 8 cm and 9 cm. The heights are 12 cm and 15 cm. Are the cylinders similar? \_\_\_\_\_  
Find the ratios of the:  
a. radii \_\_\_\_\_ b. slant heights \_\_\_\_\_ c. lateral areas \_\_\_\_\_
- Two spheres have radii 6 and 15. Find the ratios of the:  
a. areas \_\_\_\_\_ b. volumes \_\_\_\_\_
- Find the area of the circle formed when a plane passes 3 cm from the center of a sphere with radius 5 cm. \_\_\_\_\_
- 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. \_\_\_\_\_

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