

## Cylinders and Cones

Find the lateral area, total area, and volume of each cylinder.

1.  $r = 6, h = 8$ ; L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_

2.  $r = 5, h = 9$ ; L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_

3. The volume of a cylinder is  $81\pi$ . If  $r = 3$ , find  $h$ . \_\_\_\_\_

4. The volume of a cylinder is  $36\pi$ . If  $h = 4$ , find the lateral area. \_\_\_\_\_

5. The volume of a cylinder is  $150\pi$ . If  $r = 5$ , find  $h$ . \_\_\_\_\_

6. The lateral area of a cylinder is  $100\pi$ . If  $r = 5$ , find  $h$ . \_\_\_\_\_

7. The total area of a cylinder is  $144\pi$ . If  $r = h$ , find  $r$ . \_\_\_\_\_

Find the lateral area, total area, and volume of each cone.

8.  $r = 3, l = 10$ ; L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_

9.  $r = 7, h = 24$ ; L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_

10. A cone has radius 6 and slant height 10. Find the height, lateral area, total area, and volume.

$h =$  \_\_\_\_\_, L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_

11. A cone has radius 5 and volume  $100\pi$ . Find the height, slant height, lateral area, and total area.

$h =$  \_\_\_\_\_,  $l =$  \_\_\_\_\_, L.A. = \_\_\_\_\_, T.A. = \_\_\_\_\_

12. A cone and a cylinder both have height 7 and radius 3. Find the ratio of their volumes without actually calculating them. \_\_\_\_\_

13. Cylinder  $A$  has radius 4 and height 6. Cylinder  $B$  has radius 6 and height 4.

a. \_\_\_\_\_ has the greater volume.

b. \_\_\_\_\_ has the greater lateral area.

14. Cone  $E$  has radius 9 and height 12. Cone  $F$  has radius 12 and height 9.

a. \_\_\_\_\_ has the greater volume.

b. \_\_\_\_\_ has the greater lateral area.

15. The lateral area of a cone is  $32\pi$  and the slant height is 8. Find the radius, height, total area, and volume.

$r =$  \_\_\_\_\_,  $h =$  \_\_\_\_\_, T.A. = \_\_\_\_\_,  $V =$  \_\_\_\_\_

1)	2)	3)
4)	5)	6)
7)	8)	9)
10)	11)	12)
13)	14)	15)

## Practice 49

### Chapter 12 Practice

1. A rectangular solid with height 3 has a square base with side 5. Find the volume and total area.  
volume = \_\_\_\_\_, total area = \_\_\_\_\_
2. A regular square pyramid has base edge 6 and height 4. Sketch the pyramid and find the following values.  
slant height = \_\_\_\_\_  
lateral area = \_\_\_\_\_  
volume = \_\_\_\_\_
3. A cylinder has radius 3 m and height 7 m. Find the volume of the cylinder. \_\_\_\_\_
4. Wrapping paper is to be glued to the cylinder in Exercise 3 so that the cylinder is completely covered, including the bases. Find the amount of paper needed. \_\_\_\_\_
5. Find the lateral area of a cone with radius 4 and height 4. \_\_\_\_\_
6. A cone of radius 5 has volume  $75\pi$ . Find the height of the cone.  
\_\_\_\_\_
7. Find the area and volume of a sphere with radius 5.  
area = \_\_\_\_\_, volume = \_\_\_\_\_
8. Find the volume of a sphere with area  $36\pi$ . \_\_\_\_\_
9. Two right cylinders have radii 25 and 55, and heights 10 and 22, respectively. Are the cylinders similar? \_\_\_\_\_
10. Two similar cones have radii in the ratio 2:5. Find the ratios of the following:  
a. slant heights \_\_\_\_\_ b. lateral areas \_\_\_\_\_ c. volumes \_\_\_\_\_
11. Two similar pyramids have lateral areas 72 and 98. The height of the smaller pyramid is 12. Find the height of the larger pyramid.  
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1)	2)	3)
4)	5)	6)
7)	8)	9)
10)	11)	