## Exercise 6.2

1. Find (*i*) the volume (*ii*) whole surface of a right circular cylinder whose height is 15 cm and the radius of the base is 7 cm.
2. Find (*i*) area of the curved surface (*ii*) area of total surface of a right circular cylinder, whose height is 13.5 cm and whose radius of the base is 7 cm.
3. The diameter of the base of a right circular cylinder is 10 cm and its height is 21 cm. Find the area of the curved surface and volume of the cylinder.
4. The height of a right circular cylinder is 6 m. Three times the sum of the areas of its two circular faces is twice the area of the curved surface. Find the radius of its base.
5. The height and the volume of a cylinder are 40 cm and 24640 $cm^3$ respectively. Find the diameter and total surface area.
6. Find the curved surface area, the total surface area of a right circular cylinder whose height is 15 cm and the radius of base is 10.5 cm.
7. The area of curved surface of a right circular cylinder is 6600 $cm^2$ and the circumference of its base is 55 cm. Find the height of the cylinder.
8. The volume of a right circular cylinder is 1100 $cm^3$ and radius of its base is 5 cm. Find its total surface area.
9. The radius of the base of a circular cylinder is halved and height is doubled. Find the percentage change in the volume.
10. A copper solid cylinder of radius 14 cm and height 10 cm is melted and recast into cylindrical wire of diameter 4 mm. Find the length of the copper wire.
11. 10 cylindrical pillars of a building have to be painted. If the diameter of each pillar is 50 cm and the height 4 m. What will be the cost of painting at the rate of 50 paise per sq. m? (Use $\pi = 3.1416$)

12. Find the cost of painting the total outside surface area of solid cylinder 20 m in height and 50 cm in diameter at ₹ 10.50 per 100 sq.m.
13. A cylindrical tank has a capacity of 6160 cu.m. Find its depth, if the diameter of the base is 28 m. Also, calculate the cost of painting its inside curved surface at the rate of ₹ 2.80 per sq.m $\left(\text{Use } \pi = \frac{22}{7}\right)$
14. A solid cylinder has a total surface area of 231 $cm^2$. Its curved surface is $\frac{2}{3}$ of the total surface area. Find the volume of the cylinder.
15. Find the cost of digging a well 280 m deep having diameter 3 m at the rate of ₹ 3.60 per $m^3$. Find also the cost of cementing its inner curved surface at ₹ 1.25 per $m^2$.
16. The cost of painting the total outside surface closed cylindrical oil tank at 25 paise per square decimetre is ₹ 77. The height of the tank is three times the radius of the base of the tank. Find its volume.
17. A powder tin has a square base with the side 8 cm and height 13 cm. Another is cylindrical with the radius of its base 7 cm and its height 15 cm. Find the difference in their capacities.
18. A 20 m deep well with diameter 14 m is dug up the earth from the digging is spread evenly to form a platform 22 m × 14 m. Determine the height of platform.
19. A cylindrical bucket 28 cm in diameter and 12 cm high is full of water. The water is emptied into a rectangular tank 66 cm long and 28 cm wide. Find the height of the water level in the tank.
20. The volume of a metallic cylindrical pipe is 748 cu cm. Its length is 14 cm and its external radius 9 cm. Find its thickness.
21. Find the number of coins 1.5 cm in diameter and 0.2 cm thick to be melted to form a right circular cylinder whose height is 10 cm and diameter 4.5 cm.
22. The curved surface area of a cylinder pillar is 264 square metres and its volume is 924 cubic metres. Find the diameter and height of the pillar.
23. Into a circular drum of radius 4.2 m and height 3.5 m, how many full bags of wheat can be emptied if the space required for the wheat in each bag is 2.1 cu.m?
24. The total surface area of a cylinder is 6512 $cm^2$ and the circumference of its base is 88 cm. Find the volume of the cylinder. (Use $\pi = 3.14$)

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25. The radius and height of a cylinder are in the ratio 2 : 7. If the volume of the cylinder is 704 $cm^3$, find the total surface area of the cylinder.
26. A solid cylinder has a total surface area of 616 $m^2$. Its curved surface area is 1/2 of its total surface area. Find the volume of cylinder.
27. The ratio between the radius of the base and the height of a cylinder is 7 : 9. If its volume is 1386 $cm^3$, find the total surface area of the cylinder.

28. Two cylindrical vessels are filled with water. The radius of one vessel is 15 cm and height is 40 cm and radius of second vessel is 20 cm and height is 45 cm. Find the radius of another cylindrical vessel of height 30 cm which will just contain the vessel of two given vessels.

29. The cylindrical tube open at both ends is made of metal. The internal radius of the tube is 5 cm and the tube is 2 cm thick. Calculate its volume if the length of the tube is 35 cm.

30. What length of solid cylinder 2 cm in diameter must be taken to be cast into a hollow cylinder of external diameter 12 cm, 0.25 cm thick, 15 cm long.

31. A hollow cylindrical pipe is made of copper. The volume of metal used is 748 $cm^3$. Its external radius is 9 cm and length 14 cm. Find the thickness of the pipe.

32. The diameter of a roller 120 m long is 84 cm. If it takes 500 complete revolutions to level a playground, find the cost of levelling it at the at the rate of ₹ 2 per sq. metre.

33. If the radius of the base of a right circular cylinder is halved, keeping the height same, what is the ratio of the volume of the reduced cylinder to that of the original?



## Answers

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| **1.** (*i*) 2310 $cm^3$, (*ii*) 968$cm^2$ | **2.** 594 $cm^2$, 902 $cm^2$ | | **3.** 660 $cm^2$; 1650 $cm^3$ |
| **4.** 4 m | **5.** 28 cm, 4752 $cm^2$ | | **6.** 990 $cm^2$, 1683 $cm^2$ |
| **7.** 120 cm | **8.** 597.14 $cm^2$ | **9.** 50% | **10.** 49000 cm |
| **11.** ₹ 31.4 | **12.** ₹ 32.97 | **13.** 10m; ₹ 2464 | **14.** 269.5 $cm^3$ |
| **15.** ₹ 7128, ₹ 3300 | **16.** 404.25 $dm^3$ | **17.** 1478 $cm^3$ | **18.** 10 m |
| **19.** 24 cm | **20.** 1 cm | **21.** 450 | **22.** 14 m; 6 m |
| **23.** 92 bags | **24.** 36973 $cm^3$ (approx.) | | **25.** $452\frac{4}{7}$ $cm^2$ |
| **26.** 1078 $cm^3$ | **27.** 704 $cm^2$ | **28.** 30 cm | **29.** 2640 $cm^3$ |
| **30.** 44.0625 cm | **31.** 1 cm | **32.** ₹ 316800 | **33.** 1 : 4 |