



1. The length, breadth and height of a cuboid are 15 cm, 10 cm and 20 cm respectively. Find its total surface area.
2. Shanta had to make a model of a cylindrical kaleidoscope for her science project. She wanted to use chart paper to make the curved surface of the kaleidoscope, what would be the area of chart paper required by her, if she wanted to make a kaleidoscope of length 25 cm with a 3.5 cm radius? take $\pi = \frac{22}{7}$.
3. The height of a cone is 16 cm and its base radius is 12 cm. Find: (i) the curved surface area, (ii) total surface area of the cone. [Use $\pi = 3.14$]
4. If the slant height and the base radius of a cone are 10 cm and 8 cm respectively, then find (i) curved surface area and (ii) total surface area. [Take $\pi = 3.14$]
5. The hollow sphere in which the circus motor cyclist performs his stunts, has a diameter of 7 m, Find the area available to the motor cyclist for riding.
6. A hemispherical dome of a building needs to be painted. if the circumference of the base of the dome is 17.6 m, find the cost of painting it, given the cost of painting is Rs. 5 per 100 cm².
7. A wall of length 10 m was to be built across an open ground. The height of the wall is 4 m and thickness of the wall is 24 cm. If this wall is to be built up with bricks whose dimensions are 24 cm \times 12 cm \times 8 cm, how many bricks would be required?
8. The pillars of a temple are cylindrical shaped. if each pillar has a circular base of radius 20 cm and height 10 m, how much concrete mixture would be required to build 14 such pillars?
9. The sides of a right triangle are 7 cm, 24 cm and 25 cm. If it is revolved about its side 7 cm to form a solid cone find the volume of the solid so formed.
10. Two cones have their base radii in ratio of 3 : 1 and the ratio of their heights as 1 : 3. Find the ratio of their volumes.
11. How many shots, each having a diameter 3 cm, can be made from a cuboidal lead solid of dimensions 9cm \times 11cm \times 12cm?
12. Two identical cubes, each of volume 64 cm³ are joined together end to end. What is the surface area of the resulting cuboid?
13. The barrel of a fountain pen, cylindrical in shape, is 7 cm long and 5 mm in diameter. A full barrel of ink in pen is used up on writing 3300 words on an average. How many words can be written in a bottle of ink containing one-fifth of a litre?
14. Water is flowing at the rate of 15 km/h through a pipe of diameter 14 cm into a cuboidal pond which is 50 m long and 44 m wide. In what time will the level of water in the pond rise by 21 cm?
15. 500 persons are taking a dip into a cuboidal pond which is 80 m long and 50 m broad. What is the rise of water level in the pond, if the average displacement of the water by a person is 0.04 m³?
16. Find the curved surface area of a right circular cone whose slant height is 10 cm and base radius is 7 cm.
17. A joker's cap is in the form of a right circular cone with a base radius of 7 cm and a height of 24 cm. Find the area of the sheet required to make 10 such caps.
18. A hemispherical bowl is made of steel, 0.25 cm thick. The inner radius of the bowl is 5 cm. Find the outer curved surface area of the bowl.
19. If a wooden box of dimensions 8 m \times 7 m \times 6 m is to carry boxes of dimensions 8 cm \times 7 cm \times 6 cm, then find the maximum number of boxes that can be carried in the wooden box.
20. Two cubes of edge 6 cm are joined to form a cuboid. Find the total surface area of the cuboid.
21. Calculate the edge of the cube if its volume is 1331 cm³.
22. If in a cylinder, radius is doubled and height is halved, then find its curved surface area.

23. The radii of two cylinders of the same height are in the ratio 4 :5, then find the ratio of their volumes.
24. Find the area of the sheet required to make closed cylindrical vessel of height 1 m and diameter 140 cm.
25. Find the volume of cone of radius $r/2$ and height '2h'.
26. How many balls, each of radius 2 cm can be made from a solid sphere of lead of radius 8 cm ?
27. A cone is 8.4 cm high and the radius of its base is 2.1 cm. It is melted and recast into a sphere. Find the radius of the sphere.
28. If the volume of a sphere is numerically equal to its surface area, then find the diameter of the sphere.
29. The radius of a spherical balloon increases from 6 cm to 12 cm as air is being pumped into it. Then what will be the ratio of surface areas of the original balloon to the resulting new balloon ?
30. The outer and the inner radii of a hollow sphere are 12 cm and 10 cm. Find its volume.
31. In a cylinder, if radius is halved and height is doubled, then find the volume with respect to original volume.
32. A spherical ball is divided into two equal halves. If the curved surface area of each half is 56.57 cm², find the volume of the spherical ball. [use $\pi = 3.14$]
33. Find the length of the longest pole that can be put in a room of dimensions 10 m x 10 m x 5 m.
34. Find the capacity in litres of a conical vessel having height 8 cm and slant height 10 cm.
35. Calculate the surface area of a hemispherical dome of a temple with radius 14 m to be whitewashed from outside.
36. A school provides milk to the students daily in cylindrical glasses of diameter 7 cm. If the glass is filled with milk up to a height of 12 cm, find how many litres of milk is needed to serve 1600 students.
37. A rectangular piece of paper is 22 cm long and 10 cm wide. A cylinder is formed by rolling the paper along its length. Find the volume of the cylinder.
38. A heap of wheat is in the form of a cone whose diameter is 10.5 m and height is 3 m. Find its volume. If 1cm³ wheat cost is Rs 10, then find total cost.
39. A shot-put is a metallic sphere of radius 4.9 cm. If the density of the metal is 7.8 g/cm³. Find the mass of the shot-put.
40. A cylindrical vessel can hold 154 g of water. If the radius of its base is 3.5 cm, and 1 cm³ of water weighs 1g, find the depth of water.
41. A wall of length 10 m is to be built across an open ground. The height of the wall is 5 m and thickness of the wall is 42 cm. If this wall is to be built with bricks of dimensions 42 cm x 12 cm x 10 cm, then how many bricks would be required ?
42. The curved surface area of a cylinder is 176 cm² and its area of the base is 38.5 cm². Find the volume of the cylinder.
43. The diameter of a roller is 42 cm and its length is 120 cm. It takes 500 complete revolutions to move once to land a playground. Find the area of the playground in m².
44. Rinku has built a cuboidal water tank in his house. The top of the water tank is covered with an iron lid. He wants to cover the inner surface of the tank including the base with tiles of size 10 cm by 8 cm. If the dimensions of the water tank are 180 cm x 120 cm x 60 cm and cost of tiles is f 480 per dozen, then find the total amount required for tiles.
45. The diameter of moon is approximately 1/4 th of the diameter of earth. What fraction of volume of earth is the volume of moon ?
46. The curved surface area of a cylinder is 154 cm². The total surface area of the cylinder is three times its curved surface area. Find the volume of the cylinder.
47. A right angled ΔABC with sides 3 cm, 4 cm and 5 cm is revolved about the fixed side of 4 cm. Find the volume of the solid generated. Also, find the total surface area of the solid.
48. Curved surface area of cylindrical reservoir 12 m deep is plastered from inside with concrete mixture at the rate of Rs 15 per m². If the total payment made is of Rs 5652, then find the capacity of this reservoir in litres.
49. How many metres of 5 m wide cloth will be required to make a conical tent, the radius of whose base is 3.5 m and height is 12 m ?
50. A shopkeeper has one spherical laddoo of radius 5 cm. With the same amount of material, how many laddoos of radius 2.5 cm can be made ?

51. A semicircular sheet of metal of radius 14 cm is bent to form an open conical cup. Find the capacity of the cup.
52. A sphere and a right circular cylinder of the same radius have equal volumes. By what percentage does the diameter of the cylinder exceed its height ?
53. A cube and a cuboid have the same volume. The dimensions of the cuboid are in the ratio 1:2: 4. If the difference between the cost of painting the cuboid and cube (whole surface area) at the rate of Rs 5 per m² is Rs 80. Find their volumes. his house. The top of the water tank is covered with lid. He wants to cover the inner surface of the tank including the lid with square tiles of side 25 cm. If each inner edge of the water tank is 2 m long and tiles costs Rs 360 per dozen, then find the total amount required for tiles.
54. A tent is in shape of a right circular cylinder up to a height of 3 m and a cone above it. The maximum height of the tent above ground is 13.5 m. Calculate the cost of painting the inner side of the tent at the rate of Rs 3 per sq. m, if the radius of the base is 14 m.
55. Manoj Sweets placed an order of making 30 cm x 20 cm x 6 cm cardboard boxes for packing their sweets. For all overlaps, 5 % of total area is required extra. If cost of the cardboard is Rs 2 for 1000 cm², find the cost of the cardboard used for making 500 boxes.
56. A cylindrical bucket 32 cm high and with base diameter 36 cm is filled with wheat. This bucket is emptied on the ground and a conical heap is formed. If the height of the conical heap is 24 cm, find the radius and slant height of the heap.
57. Using clay, Anant made a right circular cone of height 48 cm and base radius 12 cm. Versha reshapes it in the form of a sphere. Find the radius and curved surface area of the sphere so formed.
58. A metallic right circular cylinder is 15 cm high and the diameter of its base is 14 cm. It is melted and recasted into another cylinder with radius 4 cm. Find its height and curved surface area of the new cylinder.
59. A spherical metallic shell with 10 cm external diameter weighs 1789 1/2 g. Find the thickness of the shell, if the density of the metal is 7g/cm³.
60. A dome of a building is in the form of a hemisphere. From inside, it was whitewashed at the cost of Rs 498.96. If the rate of whitewashing is Rs 4 per square metre, find the :
- Inside surface area of the dome
 - Volume of the air inside the dome
1. A residential house society is built is 4000 sq. m area. It has an underground tank to collect the rain water, the length, breadth and height of which are 50 m, 40 m and 4 m respectively. If it rains at the rate of 2 mm per minute for 5 hours, then calculate the depth of water in the tank. What value is depicted in this problem ?
62. A village having a population of 4000 requires 150 litres of water per head per day. Due to lack of sources of water, they collect the water into a tank measuring 20 m x 15 m x 6 m from a river using a long pipe.
- For how many days will the water of this tank last ?
 - Which message is conveyed by the people of village ?
63. Arihant builds a room measuring roof 22 m by 20 m. He also builds a cylindrical tank having diameter of base 2 m and height 3.5 m adjoining the room to collect the rainwater of roof for harvesting. If the tank is just filled with rainwater, find the rainfall in cm. What values are depicted in Arihant's plan ?
64. Naresh, a juice seller has set up his juice shop. He has three types of glasses (see figure) of inner diameter 5 cm to serve the customers. The height of the glasses is 10 cm. He decided to serve the customer in 'A' type of glasses. (Take $\pi = 3.14$)
- Find the volume of each type of glass.
 - Which glass has the minimum capacity ?
 - Which mathematical concept is used in above problem ?
 - By choosing a glass of type A, which value is depicted by juice seller Naresh?