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MATHS

BOOKS - KUMAR PRAKASHAN KENDRA

MATHS (GUJRATI ENGLISH)

SURFACE AREAS AND VOLUMES

Sums To Enrich Remember

1. Mary wants to decorate her Christmas tree.

She wants to place the tree on a wooden box

covered with coloured paper with picture of Santa Claus on it (see the given figure). She must know the exact quantity of paper to buy for this purpose. If the box has length, breadth and height as 80 cm, 40 cm and 20 cm respectively, how many square sheets of paper of side 40 cm would she require ?

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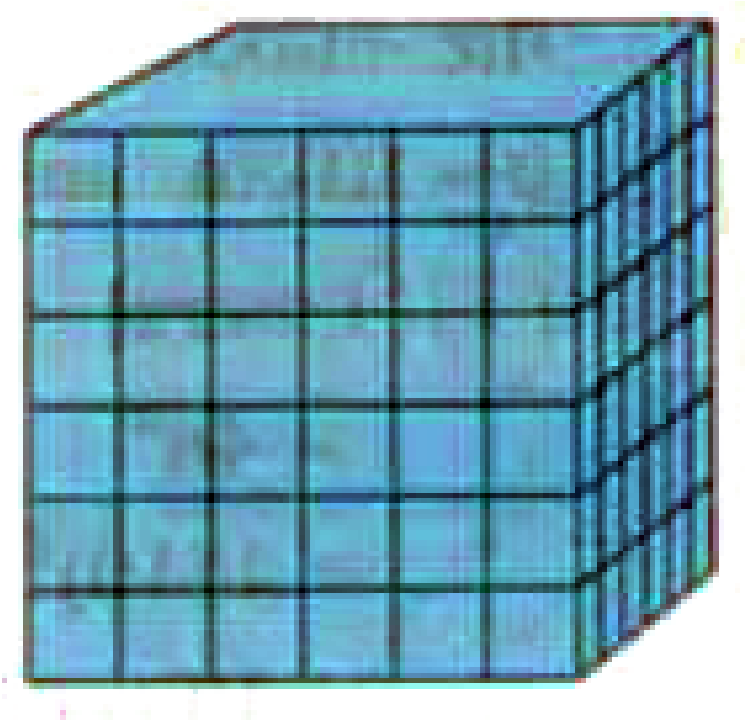
2. Hameed has built a cubical water tank with lid for his house, with each outer edge 1.5 m long. He gets the outer surface of the tank excluding the base, covered with square tiles of side 25 cm (see the given figure). Find how much he would spend for the tiles, if the cost

of the tiles is Rs. 360 per dozen.



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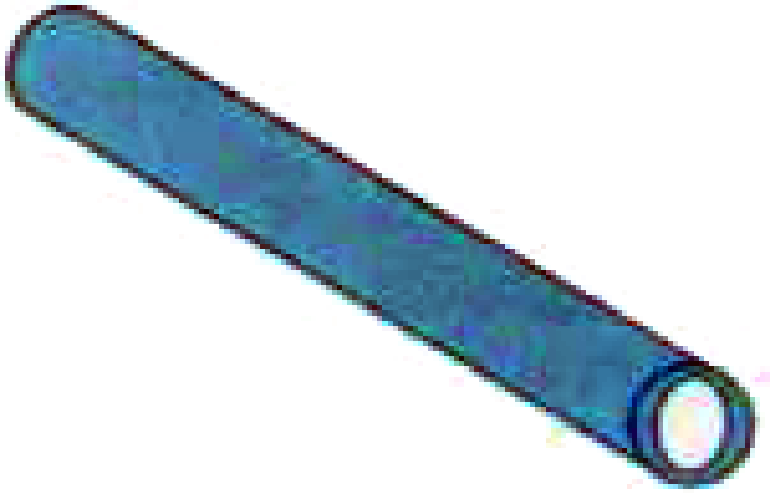
3. Savitri had to make a model of a cylindrical kaleidoscope for her science project. She wanted to use chart paper to make the curved surface of the kaleidoscope. (see the given figure). What would be the area of chart paper required by her, if she wanted to make a kaleidoscope of length 25 cm with a 3.5 cm

radius? You may take $\pi = \frac{22}{7}$.



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4. Find the curved surface area of a right circular cone whose slant height is 10 cm and base radius is 7 cm.

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5. The height of a cone is 16 cm and its base radius is 12 cm. Find the curved surface area and the total surface area of the cone. [Use $\pi = 3.14$].

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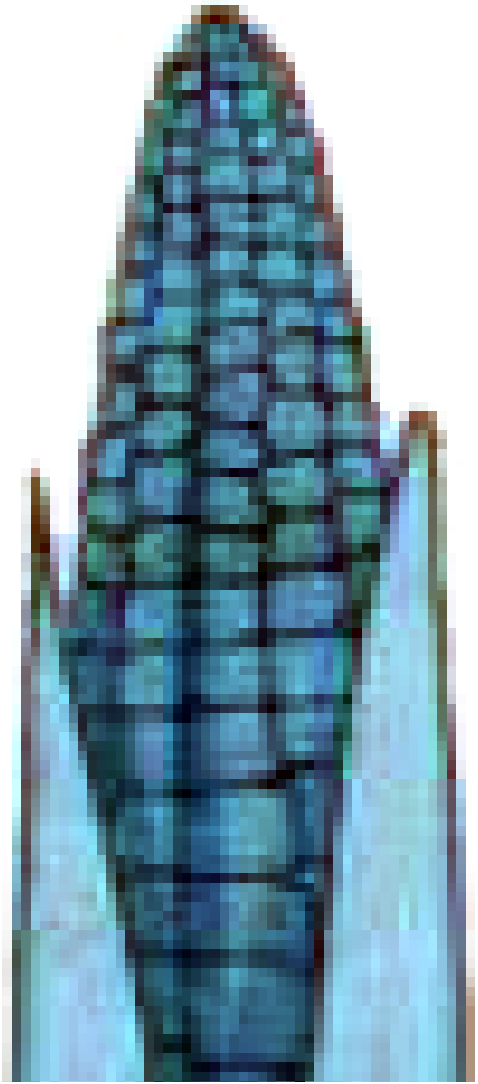
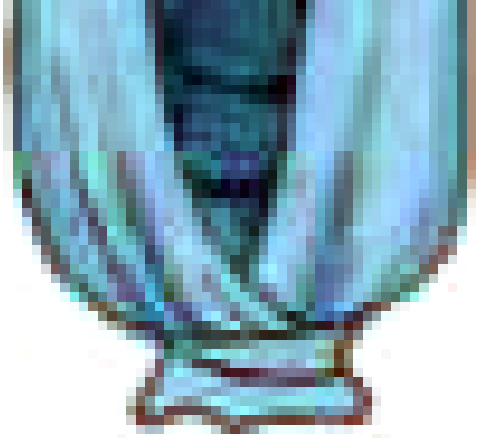
6. A corn cob (see the given figure), shaped somewhat like a cone, has the radius of its

broadest end as 2.1 cm and length (height) as 20 cm. If each 1 cm^2 of the surface of the cob carries an average of four grains, find how many grains you would find on the entire cob.





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7. Find the surface area of a sphere of radius 7 cm.

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8. Find :

(i) the curved surface area and

(ii) the total surface area of a hemisphere of radius 21 cm.

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9. The hollow sphere, in which the circus motorcyclist performs his stunts, has a diameter of 7 m. Find the area available to the motorcyclist for riding.

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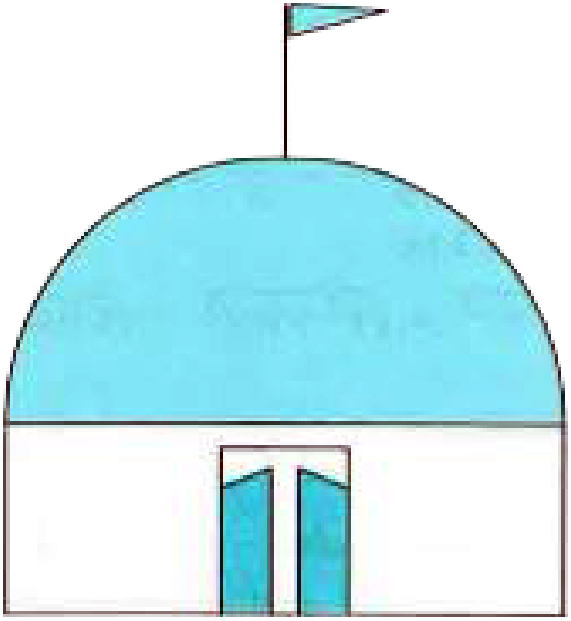
10. A hemispherical dome of a buiding needs to be painted (see the given figure). If the circumference of the base of the dome is 17.6 m, find the cost of painting it, given the cost of painting is Rs. 5 per 100 cm^2.



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11. 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 ?

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12. A child playing with building blocks, which are of the shape of cubes, has built a structure as shown in the given figure. If the edge of each cube is 3 cm, find the volume of the structure built by the child.

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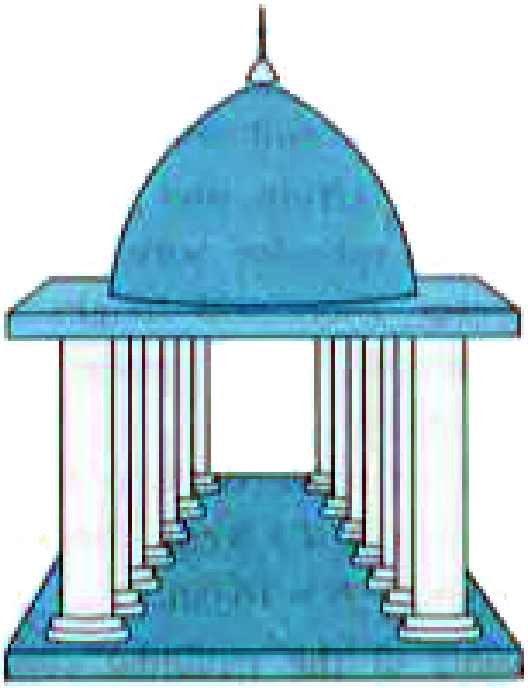
13. The pillars of a temple are cyclindrically shaped (see the given figure). If each pillar has a circular base of radius 20 cm and height 10

m, how much concrete mixture would be required to build 14 such pillars ?



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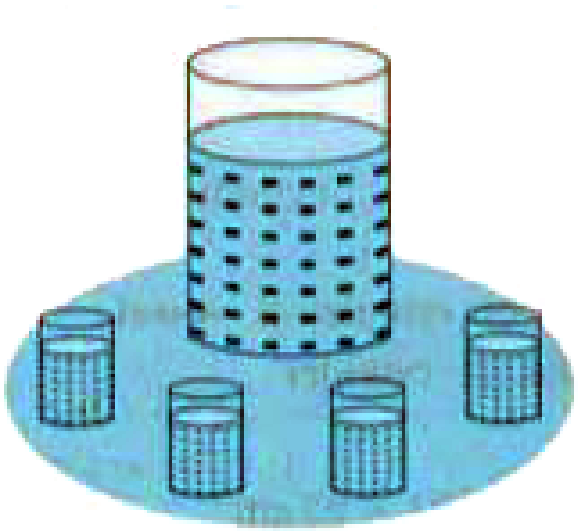
14. At a Ramzan Mela, a stall keeper in one of the food stalls has a large cylindrical vessel of base radius 15 cm filled up to a height of 32 cm with orange juice. The juice is filled in small cylindrical glasses (see the given figure) of radius 3 cm up to a height of 8 cm and sold for Rs. 3 each. How much money does the stall

keeper receive by selling the juice completely ?



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15. The height and the slant height of a cone are 21 cm and 28 cm respectively. Find the volume of the cone.

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16. Monica has a piece of canvas whose area is 551 m^2. She uses it to have a conical tent made, with a base radius of 7 m. Assuming that all the stitching margins and the wastage incurred while cutting, amounts to approximately 1 m^2, find the volume of the tent that can be made with it.

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17. Find the volume of a sphere of radius 11.2 cm.

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18. A shot-put is a metallic sphere of radius 4.9 cm. If the density of the metal is 7.8 g per cm^3, find the mass of the shot-put.

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19. A hemispherical bowl has a radius of 3.5 cm. What would be the volume of water it would contain ?

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Exercise 13 1

1. A plastic box 1.5 m long, 1.25 m wide and 65 cm deep is to be made. It is to be open at the top. Ignoring the thickness of the plastic

sheet, determine:

(i) The area of the sheet required for making the box.

(ii) The cost of sheet for it, if a sheet measuring 1 m^2 costs Rs 20.

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2. The length, breadth and height of a room are 5 m, 4 m and 3 m respectively. Find the cost of white washing the walls of the room and the celling at the rate of Rs. 7.50 per m^2.

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3. The floor of a rectangular hall has a perimeter 250 m. If the cost of painting the four walls at the rate of Rs. 10 per m^2 is Rs. 15,000, find the height of the hall.

[Hint : Area of the four walls = Lateral surface area.]

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4. The paint in a certain container is sufficient to paint an area equal to 9.375 m^2. How many bricks of dimensions 22.5 cm $\times$ 10 cm $\times$ 7.5 cm can be painted out of this container ?

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5. A cubical box has each edge 10 cm and another cuboidal box is 12.5 cm long, 10 cm wide and 8 cm high.

(i) Which box has the greater lateral surface

area and by how much ?

(ii) Which box has the smaller total surface area and by how much ?

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6. A small indoor greenhouse (herbarium) is made entirely of glass panes (including base) held together with tape. It is 30 cm long, 25 cm wide and 25 cm high.

(i) What is the area of the glass ?

(ii) How much of tape is needed for all the 12 edges ?

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7. Shanti Sweets Stall was placing an order for making cardboard boxes for packing their sweets. Two sizes of boxes were required. The bigger of dimensions 25 cm $\times$ 20 cm $\times$ 5 cm and the smaller of dimensions 15 cm $\times$ 12 cm $\times$ 5 cm. For all the overlaps, 5% of the total surface area is required extra. If the cost

of the cardboard is Rs. 4 for 1000 cm^2, find the cost of cardboard required for supplying 250 boxes of each kind.

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8. Parveen wanted to make a temporary shelter for her car, by making a box-like structure with tarpaulin that cofers all the four sides and the top of the car (with the front face as a flap which can be rolled up). Assuming that the stitching margins are very

small, and therefore negligible, how much tarpaulin would be required to make the shelter of height 2.5 m, with base dimensions 4 m $\times$ 3 m ?

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Exercise 13 2

1. The curved surface area of a right circular cylinder of height 14 cm is 88 cm^2. Find the diameter of the base of the cylinder.

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2. It is required to make a closed cylindrical tank of height 1 m and base diameter 140 cm from a metal sheet. How many square metres of the sheet are required for the same ?

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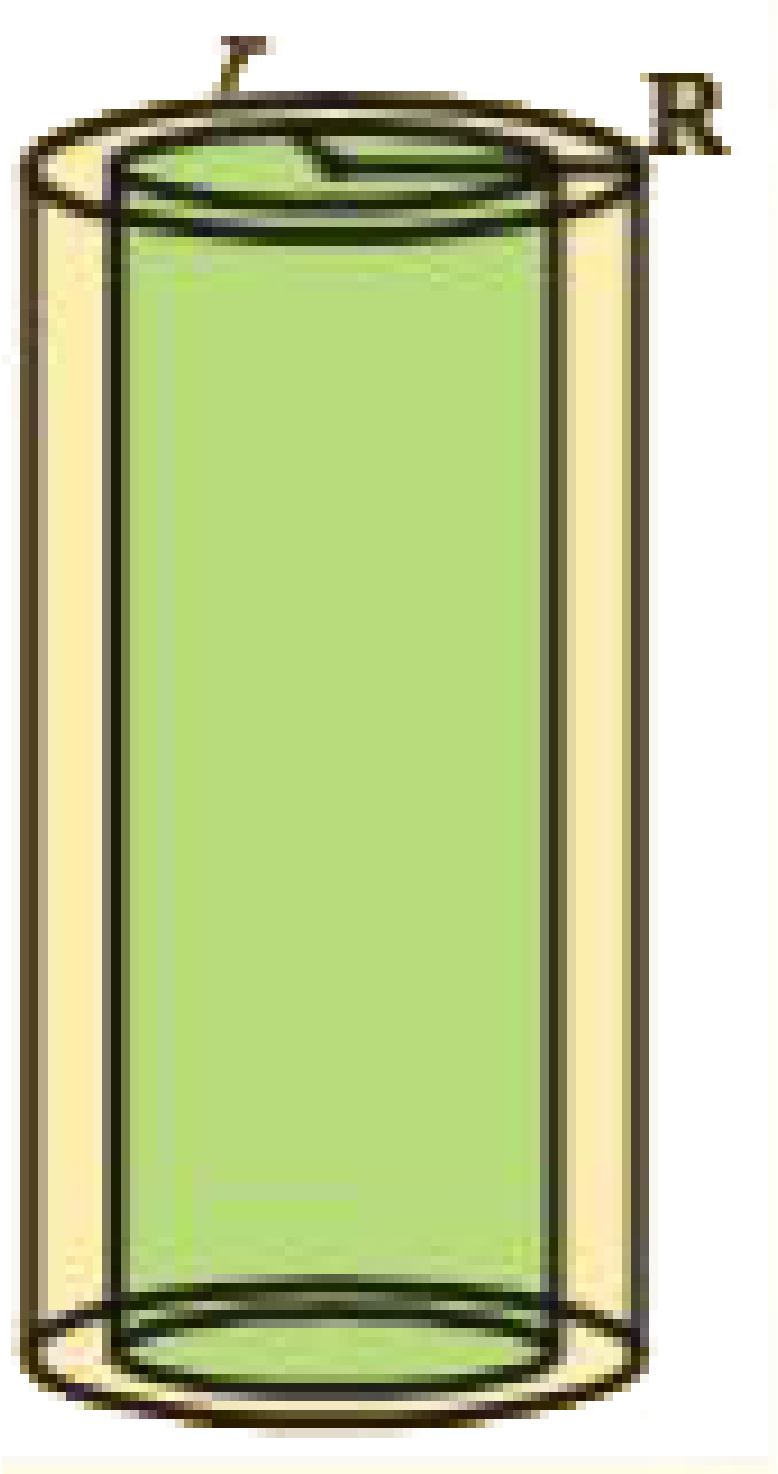
3. A metal pipe is 77 cm .long .The inner diameter of a cross section is 4 cm. the outer diameter being 4.4 cm .Find its

(i) inner curved surface area

outer curved surface area

Total surface area.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4. The diameter of a roller is 84 cm and its length is 120 cm. It takes 500 complete revolutions to move once over to level a playground. Find the area of the playground in m^2.

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5. A cylindrical pillar is 50 cm in diameter and 3.5 m in height. Find the cost of painting the curved surface of the pillar at the rate of Rs. 12.50 per m^2.

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6. Curved surface area of a right circular cylinder is 4.4 m^2. If the radius of the base of the cylinder is 0.7 m, find its height.

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7. The inner diameter of a circular well is 3.5 m. It is 10 m deep . Find

(i) its inner curved surface area

(ii) The cost of plastering this curved surface at the rate of Rs. $40 per m^2$

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8. In a hot water heating system, there is a cylindrical pipe of length 28 m and diameter 5

cm. Find the total radiating surface in the system.

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9. Find : (i) the lateral or curved surface area of a closed cylindrical petrol storage tank that is 4.2 m in diameter and 4.5 m high. (ii) how much steel was actually used, if $\frac{1}{12}$ of the steel actually used was wasted in making the tank.

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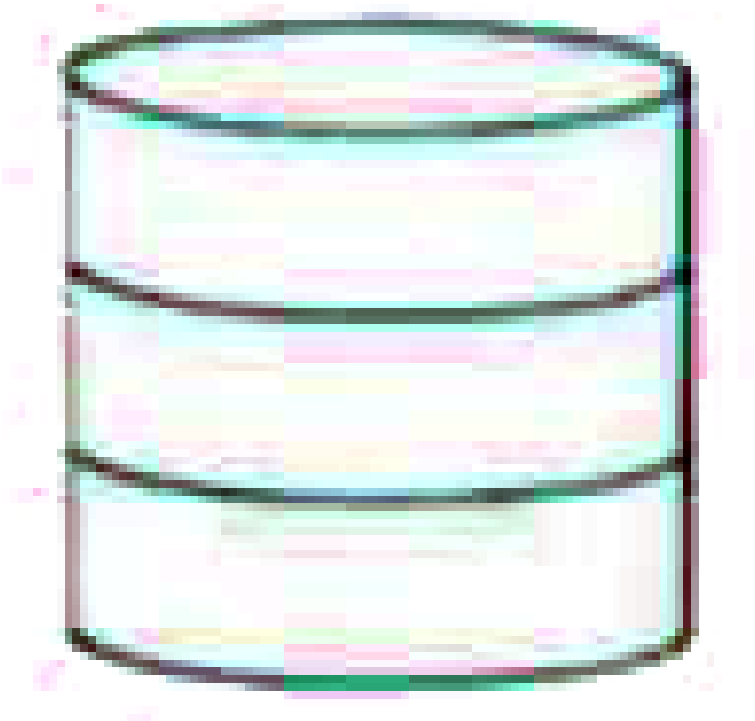
10. In the given figure, you see the frame of a lampshade. It is to be covered with a decorative cloth. The frame has a base diameter of 20 cm and height of 30 cm. A margin of 2.5 cm is to be given for folding it over the top and bottom of the frame. Find how much cloth is required for covering the

lampshade.



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11. The students of Vidyalaya were asked to participate in a competition for making and

decorating penholders in the shape of a cylinder with a base, using cardboard. Each penholder was to be of radius 3 cm and height 10.5 cm. The Vidyalaya was to supply the competitors with cardboards. If there were 35 competitors, how much cardboard was required to be bought for the competition ?

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Exercise 13 3

1. Diameter of the base of a cone is 10.5 cm and its slant height is 10 cm. Find its curved surface area.

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2. Find the total surface area of a cone, if its slant height is 21 m and diameter of its base is 24 m.

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3. Curved surface area of a cone is 308 cm^2 and its slant height is 14 cm. Find,

(i) radius of the base and

(ii) total surface area of the cone.

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4. A conical tent is 10 m high and the radius of its base is 24 m. Find (i) slant height of the tent. (ii) Cost of the canvas required to make the tent, if the cost of 1 m^2 canvas is Rs. 70

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5. What length of tarpaulin 3 m wide will be required to make conical tent of height 8 m and base radius 6 m ? Assume that the extra length of material that will be required for stitching margins and wastage in cutting is approximately 20 cm.

(Use $\pi = 3.14$)

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6. The slant height and base diameter of a conical tomb are 25 m and 14 m respectively. Find the cost of whitewashing its curved surface at the rate of Rs. 210 per 100 m^2 .

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7. A joker's cap is in the form of a right circular cone of base radius 7 cm and height 24 cm. Find the area of the sheet required to make 10 such caps.

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8. A bus stop is barricaded from the remaining part of the road, by using 50 hollow cones made of recycled carboard. Each cone has a base diameter of 40 cm and height 1 m. If the outer side of each of the cones is to be painted and the cost of painting is Rs. 12 per m^2, what will be the cost of painting all these cones ? (Use $\pi = 3.14$ and take $\sqrt{1.04} = 1.02$)

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Exercise 13 4

1. Find the surface area of a sphere of radius :

(i) 10.5 cm (ii) 5.6 cm (iii) 14 cm

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2. Find the surface area of a sphere of diameter :

(i) 14 cm (ii) 21 cm (iii) 3.5 m

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3. Find the total surface area of a hemisphere of radius 10 cm. (Use $\pi = 3.14$)

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4. The radius of a spherical balloon increases from 7 cm to 14 cm as air is being pumped into it. Find the ratio of surface areas of the balloon in the two cases.

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5. A hemispherical bowl made of brass has inner diameter 10.5 cm. Find the cost of tin-plating it on the inside at the rate of Rs. 16 per 100 cm^2.

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6. Find the radius of a sphere whose surface area is 154 cm^2.

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7. The diameter of the moon is approximately one fourth of the diameter of the earth. Find the ratio of their surface areas.

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8. 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.

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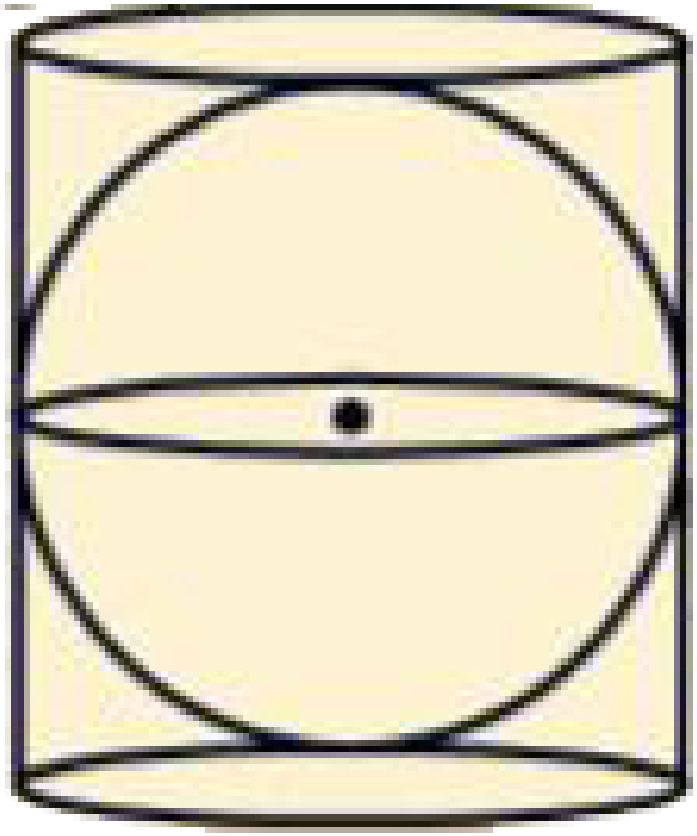
9. A right circular cylinder just enclose a sphere of radius r

Find (i) surface area of the sphere

(ii) curved surface area of the cylinder

(iii) ratio of the areas obtained in (i) and (ii)



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Exercise 13 5

1. A matchbox measures 4 cm $\times$ 2.5 cm $\times$ 1.5 cm. What will be the volume of a packet containing 12 such boxes ?

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2. A cuboidal water tank is 6 m long, 5 m wide and 4.5 m deep. How many litres of water can it hold ? $\left(1m^3 = 1000l\right)$

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3. A cuboidal vessel is 10 m long and 8 m wide. How high must it be made to hold 380 cubic metres of a liquid ?

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4. Find the cost of digging a cuboidal pit 8 m long, 6 m broad and 3 m deep at the rate of Rs. 30 per m^3.

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5. The capacity of a cuboidal tank is 50,000 litres of water. Find the breadth of the tank, if its length and depth are respectively 2.5 m and 10 m.

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6. A village, having a population of 4000, requires 150 litres of water per head per day. It has a tank measuring 20 m $\times$ 15 m $\times$ 6 m. For how many days will the water of this tank last ?

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7. A godown measures 40 m $\times$ 25 m $\times$ 15 m. Find the maximum number of wooden crates

each measuring 1.5 m $\times$ 1.25 m $\times$ 0.5 m that can be stored in the godown.

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8. A solid cube of side 12 cm is cut into eight cubes of equal volume. What will be the side of the new cube ? Also, find the ratio between their surface areas.

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9. A river 3 m deep and 40 m wide is flowing at the rate of 2 km per hour. How much water will fall into the sea in a minute?

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Exercise 13 6

1. The circumference of the base of a cylindrical vessel is 132 cm and its height is 25

cm. How many litres of water can it hold ? (1000 cm^3 = 1 l)

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2. The inner diameter of a cylindrical wooden pipe is 24 cm and its outer diameter is 28 cm. The length of the pipe is 35 cm. Find the mass of the pipe, if 1 cm^3 of wood has a mass of 0.6 g.

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3. A soft drink is available in two packs -

(i) a tin can with a rectangular base of length 5 cm and width 4 cm, having a height of 15 cm and

(ii) a plastic cylinder with circular base of diameter 7 cm and height 10 cm.

Which container has greater capacity and by how much ?

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4. If the lateral surface area of a cylinder is 94.2 cm^2 and its height is 5 cm, then find (i) radius of its base and (ii) its volume.

(Use $\pi = 3.14$)

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5. It costs Rs. 2200 to paint the inner curved surface of a cylindrical vessel 10 m deep. If the cost of painting is at the rate of Rs. 20 per m^2, find (i) inner curved surface area of the vessel,

(ii) radius of the base and (iii) capacity of the vessel.

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6. The capacity of a closed cylindrical vessel of height 1 m is 15.4 litres. How many square metres of metal sheet would be needed to make it ?

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7. A lead pencil consists of a cylinder of wood with a solid cylinder of graphite filled in the interior. The diameter of the pencil is 7 mm and the diameter of the graphite is 1 mm. If the length of the pencil is 14 cm, find the volume of the wood and that of the graphite.

8. A patient in a hospital is given soup daily in a cylindrical bowl of diameter 7 cm. If the bowl

is filled with soup to a height of 4 cm, how much soup the hospital has to prepare daily to serve 250 patients ?

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Exercise 13 7

1. Find the volume of the right circular cone with (i) radius 6 cm, height 7 cm (ii) radius 3.5 cm, height 12 cm

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2. Find the capacity in litres of a conical vessel with (i) radius 7 cm, slant height 25 cm (ii) height 12 cm, slant height 13 cm

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3. The height of a cone is 15 cm. If its volume is 1570 cm^3, find the radius of the base.

(Use $\pi = 3.14$.)

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4. If the volume of a right circular cone of height 9 cm is 48 π cm^3, find the diameter of its base.

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5. A conical pit of top diameter 3.5 m is 12 m deep. What is its capacity in kilolitres ?

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6. The volume of a right circular cone is 9856 cm^3. If the diameter of the base is 28 cm, find (i) height of the cone, (ii) slant height of the cone and (iii) curved surface area of the cone.

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7. A right triangle ABC with sides 5 cm, 12 cm and 13 cm is revolved about the side 12 cm. Find the volume of the solid so obtained.

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8. If the triangle ABC in the Question 7 above is revolved about the side 5 cm, then find the volume of the solid so obtained. Find also the ratio of the volumes of the two solids obtained in Question 7 and 8.

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9. 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. The heap is to be covered by

canvas to protect it from rain. Find the area of the canvas required.

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Exercise 13 8

1. Find the volume of a sphere whose radius is (i) 7 cm (ii) 0.63 cm.

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2. Find the amount of water displaced by a solid spherical ball of diameter

(i) 28 cm (ii) 0.21 m

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3. The diameter of a metallic ball is 4.2 cm. What is the mass of the ball, if the density of the metal is 8.9 g per cm^3 ?

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4. The diameter of the moon is approximately one-fourth of the diameter of the earth. What fraction of the volume of the earth is the volume of the moon ?

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5. How many litres of milk can a hemispherical bowl of diameter 10.5 cm hold ?

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6. A hemispherical tank is made up of an iron sheet 1 cm thick. If the inner radius is 1 m, then find the volume of the iron used to make the tank.

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7. Find the volume of a sphere whose surface area is 154 cm^2.

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8. A dome of a building is in the form of a hemisphere. From inside, it was white-washed at the cost of Rs. 498.96. If the cost of white washing is Rs. 2.00 per square metre, find the (i) inside surface area of the dome. (ii) volume of the air inside the dome.

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9. Twenty-seven solid iron spheres, each of radius r and surface area S are melted to form

a sphere with surface area S'. Find the (i) radius r' of the new sphere, (ii) ratio of S and S'.

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10. A capsule of medicine is in the shape of a sphere of diameter 3.5 mm. How much medicine (in mm^3) is needed to fill this capsule ?

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Exercise 13 9 Optional

1. From a solid cylinder whose height is 2.4 cm and diameter 1.4 cm, a conical cavity of the same height and same diameter is hollowed out. Find the total surface area of the remaining solid to the nearest cm^2.

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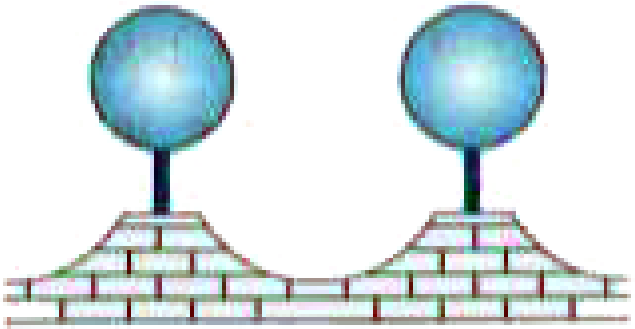
2. The front compound wall of a house is decorated by wooden spheres of diameter 21

cm, placed on small supports as shown in the given figure. Eight such spheres are used for this purpose, and are to be painted silver. Each support is a cylinder of radius 1.5 cm and height 7 cm and is to be painted black. Find the cost of paint required if silver paint costs 25 paise per cm^2 and black paint costs 5 paise per cm^2.



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3. The diameter of a sphere is decreased by 25%. By what per cent does its curved surface area decrease ?

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Skill Testing Exercise

1. The length, breadth and height of a cuboidal box are 15 cm, 12 cm and 8 cm respectively.

Find its total surface area.

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2. The length, breadth and height of a cuboid are 20 cm, 15 cm and 10 cm respectively. Find the area of its lateral surfaces.

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3. The edge of a cube is 6 cm. Find the area of its lateral surfaces.

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4. The outer measurements of a cuboidal tank are length 5 m, breadth 4 m and height 2 m. Square tiles of length 20 cm are to be fixed on its outer surfaces except the base. Find the number of tiles required. Find the cost of tiles if a box of 10 tiles costs Rs. 250.

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5. The length, breadth and height of a hall are 16 m, 10 m and 6 m respectively. It has two doors measuring 2 m $\times$ 1.5 m each and four windows measuring 2 m $\times$ 2 m each. Find the cost of white washing all the four walls and the ceiling of the hall at the rate of Rs. 5 per m^2.

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6. The edge of a cubical box is 15 cm. A cuboidal box measures 16 cm $\times$ 12 cm $\times$ 8 cm. Total surface area of which box is greater ? By how much ?

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7. For a given cylinder, the radius of the base is 7 cm and its height is 15 cm. What will be the area of its base and its top ?

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8. Find the total surface area of a cylinder with radius 21 cm and height 5 cm.

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9. The curved surface area of a cylinder is 110 cm^2 and its diameter is 7 cm. Find the height of the cylinder.

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10. The total surface area of a closed cylinder is 528 cm^2. If its radius is 7 cm, find its height.

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11. The diameter and height of a cylindrical water tank are 2 m and 14 m respectively. Find the cost of painting its outer curved surface at the rate of Rs. 20 per m^2.

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12. The radius of a cylindrical roller is 140 cm and its length is 100 cm. It takes 500 complete revolutions to level a playground completely. Find the area of playground in m^2.

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13. The diameter of a circular plate is 28 cm and its thickness is 2.5 cm. 20 such plates are stacked vertically to make a cylinder. Find the total surface area of this cylinder.

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14. Find the total surface area of a cone with diameter 7 cm and slant height 16.5 cm.


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15. 5 conical tents with diameter 8 m and height 3 m are to be made. How many metres of 2 m wide tarpaulin will be required to make these 5 tents ? $(\pi = 3.14)$


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16. The curved surface area of a cone is 628 cm^2 and its slant height is 20 cm. Find its radius. $(\pi = 3.14)$

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17. The total surface area of a close cone is 176 cm^2. If its radius is 4 cm, find its slant height.

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18. A conical tent with radius 5 m and slant height 14 m is to be made. How many metres of 2 m wide tarpaulin will be required ?

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19. 10 conical Joker's caps with radius 14 cm and height 48 cm are to be made using paper sheet. Find the area (in cm^2) of paper sheet required.

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20. The radius of a sphere is 7 cm. Find its surface area.

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21. The diameter of a solid hemisphere is 7 cm. Find its total surface area.

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22. The surface area of a sphere is 314 cm^2. Find its diameter. $(\pi = 3.14)$

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23. The total surface area of a hemisphere is 4158 cm^2. Find its diameter.

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24. The diameter of a hollow hemispherical lid is 7 m. Find the cost of painting outer surfaces of 10 such lids at the rate of Rs. 20 per m^2.

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25. The radius of a spherical balloon increases from 14 cm to 35 cm as air is pumped into it. Find the ratio of surface areas of the balloon in these two cases.

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26. A cuboidal tank measures 8 m $\times$ 6 m $\times$ 5 m. Find its volume. How many litres of water can it hold ?

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27. The length and breadth of a cuboidal pit are 8 m and 6 m respectively. It is dug to the depth of 10 m and the earth removed from it is spread evenly on a square plot of length 40

m. Find thde height of the earth spread on the plot.

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28. The capacity of a cuboidal water tank is 1,00,000 litres. If its length is 5 m and breadth is 4 m, find its height.

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29. A colour box measures 12 cm $\times$ 6 cm $\times$ 4 cm. Find the volume of a container which can hold 25 such boxes.

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30. The population of a village is 10,000. The daily requirement of water per day is 100 litres per person. The cuboidal water tank of the village measures 20 m $\times$ 15 m $\times$ 10 m. If the

tank is filled completely, for how many days will the water of this tank last ?

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31. A cuboidal pit measuring 5 m $\times$ 5 m $\times$ 20 m is dug and the earth removed from it is spread evenly on a rectangular plot measuring 50 m $\times$ 40 m. Find the height of the earth spread on the plot.

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32. The area of the base of a cylinder is 40 cm^2 and its height is 10 cm. Find the volume of the cylinder.

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33. The radius and height of a cylindrical cistern are 1.4 m and 2 m respectively. How many litres of water can it hold ?

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34. The curved surface area of a cylinder is 88 cm^2. If the height of the cylinder is 4 cm, find its volume.

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35. The capacity of a cylindrical vessel is 69,300 cm^3. If the diameter of the vessel is 42 cm, find its height.

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36. The diameter and height of a cylinderical plate are 14 cm and 2 cm respectively. 20 such plates are stacked up to make a larger cylinder. Find the volume of this larger cylinder.

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37. The curved surface area of a cylindrical pillar is 440 m^2 and its volume is 3080 m^3. Find the height of the pillar.

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38. The radius of the base of a cone is 14 cm and its height is 15 cm. Find the volume of the cone.

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39. The cuved surface area of a cone is 550 cm^2. If the diameter of the cone is 14 cm, find its volume.

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40. The circumference of the base of a cone is 44 cm. If its height is 9 cm, find its volume.

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41. The radius and slant height of a cone are 21 cm and 35 cm respectively. Find the volume of the cone.

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42. A conical vessel with radius 10 cm and height 15 cm is completely filled with water. This water is poured into a cylinder with radius 5 cm. Find the height of water in the cylinder.

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43. In the field of Mohanbhai, wheat is collected to form 10 conical heaps. The diameter of each heap is 140 cm and the

height of each heap is 60 cm. All the wheat is now to be stored in cylinders with radius 20 cm and height 50 cm each. Find the number of cylinders required.

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44. Find the volume of a solid hemisphere with radius 30 cm. $(\pi = 3.14)$

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45. The volume of a sphere is 4851 cm^3. Find its diameter.

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46. The volume of a hemisphere is $89\frac{5}{6}cm^3$. Find its diameter.

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47. The volume of a sphere is $1437\frac{1}{3}cm^3$. Find its surface area.

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48. The total surface area of a solid hemisphere is 462 cm^3. Find its volume.

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49. A solid sphere with radius 6 cm was totally submerged in water kept in a cylindrical vessel. The water level in the vessel rose by 4.5 cm. Find the radius of the cylindrical vessel.

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Multiple Choice Questions

1. The total surface area of a cuboid with length 20 cm, breadth 15 cm and height 10 cm

is ..... cm^2.

A. 1300

B. 650

C. 3000

D. 1500

Answer: A

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2. The lateral surface area of a cuboid with length 15 cm, breadth 8 cm and height 5 cm is ..... cm^2.

A. 115

B. 230

C. 600

D. 300

Answer: B

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3. The diameter of a cylinder is 7 cm and its curved surface area is 220 cm^2. Then, its height is ..... cm.

A. 35

B. 10

C. 44

D. 20

Answer: B

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4. The total surface area of a closed cylinder with radius 3.5 cm and height 6.5 cm is ..... cm^2.

A. 110

B. 220

C. 330

D. 440

Answer: B

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5. The curved surface area of a cone is 880 cm^2 . If its slant height is 20 cm, then its diameter is ..... cm.

A. 14

B. 7

C. 5

D. 28

Answer: D

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6. The curved surface area of a cone with diameter 14 cm and slant height 10 cm is ..... cm^2.

A. 220

B. 1540

C. 110

D. 440

Answer: A

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7. The height of a cone is 24 cm and its slant height is 25 cm. Then, its diameter is ..... cm.

A. 14

B. 7

C. 4

D. 49

Answer: A

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8. The circumference of the base of a cone is 44 cm and its slant height is 15 cm. Then, its curved surface area is ..... cm^2.

A. 14

B. 154

C. 330

D. 115

Answer: C

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9. The diameter of a cone is 7 cm and its slant height is 16.5 cm. Then, its total surface area is ..... cm^2

A. 110

B. 220

C. 105

D. 154

Answer: B

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10. Total surface area of a hemisphere with radius 7 cm is ..... cm^2.

A. 231

B. 115.5

C. 462

D. 154

Answer: C

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11. Total surface area of a hemisphere is 72 cm^2. Then, its curved surface area is ..... cm^2.

A. 24

B. 36

C. 48

D. 72

Answer: C

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12. The surface area of a sphere is 616 cm^2. Then, its radius is ..... cm.

A. 6

B. 8

C. 7

D. 14

Answer: C

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13. In a cuboid, the area of the face with sides length and breadth is 120 cm^2. If the height of the cuboid is 5 cm, then its volume is ..... cm^3.

A. 120

B. 240

C. 600

D. 300

Answer: C

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14. The volume of a cylinder is 2200 cm^3 and its height is 7 cm. Then, the radius of the cylinder is ..... cm.

A. 5

B. 15

C. 10

D. 20

Answer: C

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15. The radius and height of a cone are 7 cm and 3 cm respectively. Then, the volume of the cone is ..... cm^3.

A. 154

B. 168

C. 148

D. 462

Answer: A

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16. The volume of a sphere is 4.5 πcm^3. Then, its diameter is ..... cm.

A. 3

B. 2

C. 1.5

D. 4

Answer: A

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17. The ratio of radii of two cones is 2 : 3 and the ratio of their heights is 9 : 4. Then, the ratio of their volumes is ..... .

A. $1:1$

B. $3:2$

C. $1:3$

D. $2:3$

Answer: A

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18. The circumference of the base of a cone is 44 cm and its height is 6 cm. Then, its volume is ..... cm^3.

A. 49

B. 98

C. 308

D. 154

Answer: C

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