Ravi Maths Tuition

Surface Areas and Volumes

9th Standard

Mathematics

Multiple Choice Question 14 x 1 = 14

1) Which of the following is a plane figure?

(a) Cone (b) Square (c) Cylinder (d) Cube.

2) Which of the following is a solid figure?

(a) Circle (b) Cylinder (c) Square (d) Rectangle.

3) Identify the wrong statement of the following:

(a) A square can be drawn on our notebook. (b) A circle can be drawn on the blackboard.

(c) A rectangle can be drawn on a piece of paper. (d) A triangle cannot be drawn on a wall.

4) The number of edges of a cube are

(a) 6 (b) 8 (c) 12 (d) 16.

5) The total surface area of a cube of side a is

(a) $4a^2$ (b) $6a^2$ (c) $3a^2$ (d) $8a^2$.

6) The lateral surface area of a cube of side a is

(a) $4a^2$ (b) $6a^2$ (c) $3a^2$ (d) $2a^2$.

7) If the edges of a cuboid are l, b and h respectively, then the total surface area of the cuboid is

(a) 2(lb + bh + hl) (b) lbh (c) 2(l + b)h (d) none of these.

8) The lateral surface area of a cuboid of length l, breadth b and height h is

(a) 2(lb + bh + hl) (b) 2(l + b)h (c) lbh (d) none of these.

9) The side of a cube is 1 cm. The total surface area of the figure formed by joining two such cubes is

(a) $2(2 + 1 + 2)\ cm^2$ (b) $2(2 + 2 + 2)\ cm^2$ (c) $2(1 + 1 + 1)\ cm^2$ (d) $2(1 + 1 + 2)\ cm^2$

10) A brick measures 25 cm $\times$ 12 cm $\times$ 10 cm. Its surface area is

(a) $670\ cm^2$ (b) $1340\ cm^2$ (c) $3000\ cm^2$ (d) $1500\ cm^2$

11) The dimensions of a box are 1 m, 80 cm and 50 cm. The area of its four walls is

(a) $6000\ cm^2$ (b) $12000\ cm^2$ (c) $18000\ cm^2$ (d) $24000\ cm^2$

12) The area of the four walls of a room is 300 m^2. Its length and height are 15 m and 6 m respectively. Find its breadth.

(a) 10 m (b) 5 m (c) 20 m (d) 15 m

13) The area of the four walls of a room is 80 cm^2 and its height is 4 m. Then, the perimeter of the floor of the room is

(a) 16 m (b) 5 m (c) 20 m (d) 10 m

14) If the radius of a cylinder is doubled and height is halved then its curved surface area will be:_____

(a) halved (b) doubled (c) the same (d) four times

1 Marks 45 x 1 = 45

15) Each face of cube has perimeter to 32 cm.Find its surface area.

16) Find the volume of a rectangular solid (cuboid) measuring 1 m $\times$ 50 cm $\times$ 0.5 m.

17) If the length of the diagonal of a cube is $6\sqrt{3}$, then find the length of the edge of the cube.

18) The volume of a cube is 729 cm^2 . Find its total surface area.

19) How many spherical balls of diameter 1 cm can be made from an iron ball of diameter 8 cm?

20) The diameter and height of a right circular cone are 6 cm and 7 cm respectively. Find the volume of the right circular cone.

21) The area of base of right circular cylinder is 54 cm^2 and its height is 10 cm. Find its volume.

22) If the radius of a cylinder is doubled and height is halved, then find the new volume of the cylinder

23) The length and breadth of a rectangular solid are respectively 25 cm and 20 cm. If its volume is 7000 cm^3, then find its heigh t.

24) What is the ratio of the volumes of a cylinder and a hemisphere of equal radii and equal height?

25) Find the surface area of a box whose length, breadth and height are 12 cm, 8 cm and 5 cm, respectively.

26) What is the lateral surface area of a cuboid with dimensions 1.b and h?

27) What is the maximum length of a pencil that can be place in a rectangular box of dimensions 8 ern x 6 cm x 5 cm?

28) The length, breadth and height of a cuboid are 15 cm, 10 cm and 5 cm. Find its volume.

29) If the volume of a cube is 216 cm^2 , then find its edge.

30) An ice-cream cone has the radius of base 2 cm. If its height is 10 ern, then determine its volume.

31) If the volume of cube is $3\sqrt{3}$ a^3 cu units then find its total surface area

32) The volume of a sphere is 905 $\frac{1}{7}$ cm^3 . Determine its diameter.

33) The volume of a sphere is 38808 cm^2 . Find its radius.

34) The volume of a cylinder is 4481 cm^3 and height 7 cm. Find its radius.

35) Determine the height of a conical tin having radius ofthe base as 30 crn and its slant height as 50 cm.

36) A cylinder is 3 m high and the circumference of its base is 22 m. Find its curved surface area.

37) If surface area of a sphere is 676 πcm^2 , then find its radius.

38) If the radius (r) of a sphere is reduced to its half. Then, find its new volume.

39) If volume and surface area of a sphere is numerically equal. then find its radius.

40) The height of a right circular cylinder with lateral surface area 792 cm^2 is 21 ern. Find the diameter of its base.

41) The circumference of the base of 9 m high wooden solid cone is 44 m. Find the slant height of the cone.

42) The curved surface area of a right circular cylinder is 4400 cm^2 . If the circumference of the base is 110 ern, then find the height of the cylinder.

43) Find the volume of a sphere which is equal to two-third of the volume of a cylinder whose height and diameter are equal to the diameter of the sphere.

44) Find the capacity of a tank of demensions 8 am $\times$ 6 cm $\times$ 2.5 cm.

45) Calculate the volume of a cuboid whose dimensions are 3.6 cm, 8.2 am and 11 cm.

46) Compute the curved surface area of a hemishpere whose diameter is 14 cm.

47) If the number of square centimetres in the surface area of a shpere is equal to the number of cubic cm in its volume. find the diameter of the sphere?

48) Find the amount of water displaced by a solid spherical ball of diameter 4.2 cm, when it is completely immersed in water.

49) The diameter of a football is five times the diameter of a criket ball. Ratio of surface areas of football and criket ball is _____

50) How many faces does a right circular cylinder have?

51) Find the volume of a right circular cone with radius 6 cm and height 7 cm.

52) Two cylinders have bases of same size. The diameter of each is 7 cm. If one of the cylinder is 10 cm high and the other is 20 cm high, then the ratio of their volumes is _____

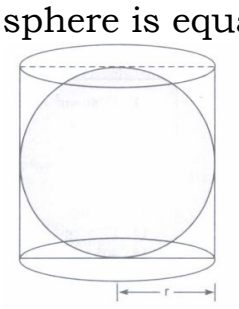
53) The radii of two right circular cylinders are in the ratio 2:3 and their heights are in the ratio 5:4, then the ratio of their volumes will be _____

54) What is the longest pole that can be put in a room of dimensions l = 10 cm, b = 10 cm and h = 5 cm?

55) Total surface area of a cube is 96 cm^2. What is its volume?

56) The radius of a sphere doubled. What per cent of its volume is increased?

57) Write 'True or False' for the following statements:
(i) A right circular cylinder just encloses a sphere of radius r as shown in the figure. The area of the sphere is equal to the curved surface area of the cylinder.

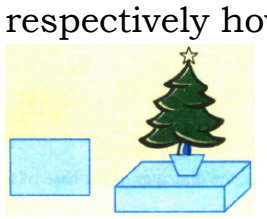


58) If the total surface area of a sphere is 154 cm^2, Find its total volume.

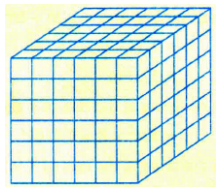
59) If the radius of a sphere is 3r then what is its volume?

2 Marks 180 x 2 = 360

60) Mary wants to decorate her Christmas tree. She wants to place the tree on a wooden block covered with coloured paper with picture of Santa Claus on it (see 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?



61) 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 figure). Find how much he would spend for the tiles if the cost of the tiles is Rs.360 per dozen.



62) Savitri had to make a model of a cylindrical kaleidoscope for her science project. She wanted to use buy the 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? You may take $\pi = \frac{22}{7}$.

63) 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 π = 3.14)

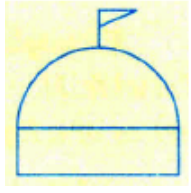
64) Find the curved surface area of a right circular cone, whose slant height is 10 cm and base radius is 7 cm.

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

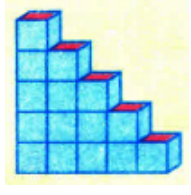
66) Find
(i) the curved surface area and
(ii) the total surface area of a hemisphere of radius 21 cm.

67) 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

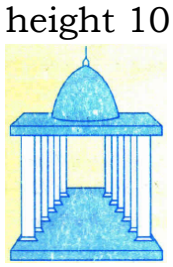
68) A hemispherical dome of a building needs to be painted. If the circumference of the base of the dome is 17.6 cm, find the cost of painting it, given the cost of painting is Rs 5 per 100 cm^2. $\left(Take\ \pi = \frac{22}{7}\right)$



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



70) The pillars of a temple are cylindrically 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?



71) 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 Fig.) of radius 3 cm up to a height of 8 cm, and sold for Rs. 15 each. How much money does the stall keeper receive by selling the juice completely?

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

73) 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.

74) Find the volume of a sphere of radius 11.2 cm.

75) 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.

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

77) The edge of a cube is 10.5 mm. Find its total surface area in cm^2.

78) If the length of the diagonal of a cube is $6\sqrt{3}$ cm, find the edge of the cube.

79) The length, breadth, and height of a cuboid are 15 cm, 10 cm, and 20 cm. Find the surface area of the cuboid.

80) Three cubes are placed adjacent to each other in a row. Find the ratio of the total surface area of the cuboid so formed and that of anyone of these cubes.

81) Three cubes each of the side 3 cm are joined end to end. Find the surface area of the resulting cuboid.

82) The dimensions of a rectangular box are in the ratio 2: 3: 4 and difference between the cost of covering it with sheet of paper at the rate of Rs. 4 and Rs. 4.50 per m^2 is Rs. 416. Find the dimensions of the box.

83) The surface area of a cuboid is 1372 cm^2.If its dimensions are in the ratio 4: 2: 1, find its length.

84) The floor of a rectangular hall has a perimeter of 250 m and its length and breadth are in the ratio of 13: 12. If the cost of painting the four walls and ceiling at the rate of Rs. 5 per m^2 is Rs.27000, find the height of the hall.

85) A right circular cylinder is 3 m high and the circumference of its base is 22 m.Find its curved surface area.

86) The diameter of a circular wall is 4.5 m and its depths is 14 m.Find the cost of cementing the inner surface of the wall at Rs. 120 per sq. m.

87) A metal pipe is 77 cm long.The inner diameter of a cross-section is 4 cm and outer diameter is 5.0 cm.Find its
(i) Inner curved surface area
(ii) Outer curved surface area

88) A cylinder 6 m high, is open at the top. The circumference of its base is 22 m. Find its total surface area.

89) The height of a right circular cylinder is 15 cm. Its curved surface area is 660 cm^2. Find the radius of its base.

90) A solid cylinder has a total surface area 462 cm^2. Its curved surface area is one-third of the total surface area. Find the height of the cylinder.

91) The radii of two right circular cylinders are in the ratio 2 : 3 and their heights are in the ratio 5 : 4. Calculate the ratio of their curved surface areas.

92) A cylindrical tower is 5 m in diameter and 14 m high. Find the cost of white-washing its curved surface at Rs 10 per square metre.

93) The diameter of the roller is 84 cm and its length is 120 cm. It takes 500 complete revolutions to move once over to level a playground in square metres.

94) Find the total surface area of a solid cone if its slant height is 21 cm and diameter of its base is 24 cm.

95) What length of canvas 3 m wide will be required to make a conical tent of height 8 m and radius of base 6 m? (Use π = 3.14)

96) The circumference of the base of a 24 m high solid wooden cone is 44 m. Find its curved surface area.

97) What is the radius and curved surface of a cone made from a quadrant of a circle of radius 28 cm?

98) The radius and height of a right circular cone are in the ratio 4 : 3. If the area of the base of the cone is 154 cm^2, find the area of its curved surface. $\left[Use\ \pi = \frac{22}{7}\right]$

99) The radius and slant height of a cone are in the ratio 4: 7. If its curved surface area is 792 cm^2, find its height.

100) The curved surface area of a right circular cone is twice that of another right circular cone. If the slant height of the second cone is twice that of the first cone, find the ratio of the radius of first cone to that of second cone.

101) A circus tent is in the form of a cone of height 15 m and diameter 16 m. Find the length of the canvas needed to make the tent if the width of the canvas is 2 m. (Use π = 3.14)

102) How many metres of cloth $1\frac{4}{7}m$ wide will be 7 required to make a conical tent whose base diameter is 10 m and whose vertical height is 12 cm?

103) A heap of rice is in the form of a cone whose diameter is 48 m and height 10 m. The heap is to be covered by canvas to protect it from rain. Find the cost of canvas required at Rs 70/m^2.

104) A hemispherical dome is to be painted from the inside. The circumference of the dome is 176 m. Find the area to be painted.

105) The total surface area of a solid hemisphere is 5940 cm^2, Find the diameter of the hemisphere.

106) The internal and external diameters of a hollow hemispherical vessel are 24 cm and 25 cm respectively. The cost to paint 1 sq. cm of surface is Rs 1.75. Find the total cost to the nearest rupee to paint the vessel all over. Ignore the area of the edge. $(Take \quad \pi = 3.14)$

107) The length of the diagonal of a cube is $\sqrt{12}cm$. What is the length of the edge of the cube?

108) What is the volume of a cube whose total surface area is 864 m^2?

109) Three cubes each of volume 125 cm^3 are joined end to end to form a cuboid. Find the total surface area of cuboid.

110) A solid cube of side 16 cm is cut into eight cubes of equal volume. What will be the side of the new cube.

111) The lateral surface area of a cube is 324 cm^2. Find its volume and the total surface area.

112) Find the volume, total surface area, lateral surface area and the length of diagonal of a cube, each of whose edges measures 20 cm.

113) The height, breadth and length of a cuboidal box are in the ratio 1 : 2 : 3. Find the volume of the box if its surface area is 1078 dm^2.

114) Volume of a rectangular block of stone is 2592 dm^2 and its dimensions are in the ratio 4: 3 : 1. Find its dimensions.

115) A village having a population of 2000, requires 150 litres of water per head per day. It has a tank measuring 20 m $\times$ 15 m $\times$ 6 m. Find how many days will the water of this tank last?

116) The length of a room is double its breadth. Its height is 3 m. The area of the four walls excluding a door of dimensions 4 m $\times$ 2 m is 100 m^2. Find its volume.

117) A storage tank is in the form of a cube, when full has the volume of water as 15.625 m^3. If the present depth of water is 1.3 m, find the volume of water already used from the tank.

118) A solid cuboid of dimensions 12 cm $\times$ 18 cm $\times$ 10 cm is cut into cubes of side 2 cm. How many such cubes can be cut from the cuboid? Compare the total surface area of the cube and cuboid.

119) A wall was to be built across an open ground to cover a width (or breadth) of 10 m. 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?

120) To construct a wall 25 m long, 0.3 m thick and 6 m high, bricks of dimensions 50 cm $\times$ 15 cm $\times$ 10 cm, each are used. If the mortar occupies $\frac{1}{10}$ th of the volume of the wall, find the number of bricks used.

121) Volume of a right circular cylinder is 1100 cm^3 and the radius of its base is 5 cm. Find its curved surface area.

122) The volume of a right circular cylinder is 3850 cm^3. Find its height if it's, diameter is 14 cm.

123) The total surface area of a cylinder of radius 7 cm is 880 m^2. Find the height and the volume of the cylinder.

124) The volume of a cylinder is 448π cubic cm and the height is 7 cm. Find its total surface area.

125) The volume of a right circular cylinder is 1100 cm^3 and the radius of its base is 5 m. Find its curved surface area. $\left(Use\ \pi = \frac{22}{7}\right)$

126) The outer and inner radii of a hollow copper cylinder of height 6 cm are 11 cm and 10 cm. Find the volume of the copper used.

127) The radii of two cylinders are in the ratio of 2 : 3 and their heights are in the ratio of 5 : 3. Find the ratio of their volumes.

128) A bag of grains contains 2.8 m^3 of grain. How many bags of grain are needed to fill a right circular cylindrical drum of radius 4.2 m and height 5 rn?

129) A cylindrical pipe open at both ends is made of iron sheet which is 2 cm thick. If the outer diameter is 16 cm and its length is 100 cm, find how many cubic centimeters of iron has been used in making the tube?

130) How many cylindrical glasses of 3 cm base radius and height 8 cm can be refilled from a cylindrical vessel of base radius 15 cm which is filled upto a height of 32 cm?

131) A cylindrical container of base radius 28 cm contains sufficient water to submerge a rectangular block of iron with dimensions 32 cm $\times$ 22 cm $\times$ 14 cm. Find the rise in the level of water, when the block is completely submerged.

132) Find the capacity in litres of a conical vessel whose base diameter is 14 cm and slant height is 25 cm.

133) A cone of base radius 7 cm has a curved surface area 550 cm ^{2}. Find its volume. $\left(Use\pi = \frac{22}{7}\right)$

134) The volume of a cone of base radius 3 cm is 12 π cm^2, Find the slant height of the cone.

135) 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.

136) Find the volume of a right circular cone whose slant height is 13 cm and the diameter of the base is 10 cm. $(Take \quad \pi = 3.14)$

137) The ratio of the volume of two cones is 4 : 5 and the ratio of their base radii is 2 : 3. Find the ratio of their vertical heights.

138) The radius and height of a cone are in the ratio 3 : 4. If its volume is 301.44 cu cm, find its radius and slant height. $(Take\ \pi = 3.14)$

139) The radius and height of a right circular cone are in the ratio of 5 : 12 and its volume is 2512 cm^3. Find the slant height and radius of base of cone. $(Take\ \pi = 3.14)$

140) The height and radius of a cone are in the ratio 4 : 3. If its volume is 96 π cm^3, find the slant height of the cone.

141) The radius and height of a right circular cone are in the ratio 5 : 12. If its volume is 314 cm^3, find the slant height and curved surface area. $(Use\ \pi = 3.14)$

142) A military tent is in the form of a circular cone of vertical height 6 m, the diameter of the base being 7 m. If 12 soldiers can sleep in it, find the average cubic metre of air space required per soldier.

143) A patient in a hospital is given soup daily in a conical bowl of diameter 7 cm. If the bowl is filled with soup to a height of 6 cm, how much soup the hospital has to prepare daily to serve 320 patients.

144) The largest sphere is carved out of a cube of side 7 cm. Find the volume of the sphere. (Use $\pi = \frac{22}{7}$)

145) Find the volume of a sphere whose surface area is 154 cm^2. Also, find the cost of polishing its surface @ Rs 5 per cm^2.

146) The volumes of two spheres are in the ratio of 64 : 27. Find their radii if the sum of their radii is 21 cm.

147) A hemispherical shaped container has curved surface area of 2772 cm^2. Find the capacity of container.

148) Find the volume of metal used to construct a hollow sphere of internal and external diameters as 10 cm and 13 em respectively. (Use π = 3.14)

149) A solid sphere of radius 3 cm is melted and then cast into small spherical balls each of diameter 0.6 cm. Find the number of balls thus obtained.

150) A hemispherical bowl of internal and external diameter 6 cm and 10 cm is melted and formed into a cylinder of diameter 14 cm. Find the height of the cylinder.

151) A boy has a spherical sweet of radius 4 cm. A girl has 8 spherical sweets each of radius 2 cm. Find the ratio of the volume of the sweets the boy has to the sweets the girl has.

152) A cylindrical container of base radius 6 cm, has water up to a height of 5 cm. Find:
(a) Volume of water
(b) A metal sphere of radius 2 cm is totally submerged in the water. Find rise in the water level.

153) A right circular cylinder just encloses a sphere of radius 14 cm. Find
(i) Volume of the sphere
(ii) Volume of the cylinder
(iii) Ratio of the volumes of sphere and cylinder.

154) The circumference of the cross-section of a hemispherical bowl is 132 cm. Find the capacity of the bowl. (Take $\pi = \frac{22}{7}$)

155) Marbles of diameter 1.4 cm are dropped into a beaker containing some water and are fully submerged. The diameter of the beaker is 7 cm. Find how many marbles have been dropped in it, if water rises by 56 cm.

156) A hemispherical dome of a building is to be white washed. The total cost of white washing of dome building is Rs 924 at the rate of Rs $3/m^2$. Find the
(i) radius of the hemisphere
(ii) volume of air in the dome

157) How many square metres of canvas is required for a conical tent whose height is 3.5 m and the radius of Whose base is 12 m?

158) The length, breadth, and height of a cuboid are in the ratio 6 : 4 : 5. If the total surface area of the cuboid is 2368 cm^2 . Find its dimensions.

159) A cylinder of base diameter 8 cm and height 7 cm is dipped vertically one-third in a bucket full of paint. How much area gets painted?

160) The length, breadth and height of a cuboid are 10 em, 8 cm and 5 cm. Find its surface area and the lateral surface area.

161) A thin cardboard sheet is used to cover the curved surface area of a cylinder with radius 10.5 em and height 30 cm. Find the area of cardboard sheet used.

162) Find the amount of water displaced by a solid spherical ball of diameter 4.2 cm. when it is completely immersed in water.

163) 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 the area of the
sheet, required for making the box.

164) A right triangle with sides 6 cm. 8 cm and 10 cm is revolved about the side 8 cm. Find the volume and the curved surface of the solid so formed

165) Curved surface area of a cone of radius 4 cm. is 20n cm^2 . Find total surface area of the same cone in terms of π

166) The radius of a spherical balloon is inflated from 1.5 cm to 2.5 cm by pumping more air in it. Find the ratio of surface Tea of resulting balloon to the original balloon.

167) If the radius of a right circular cone is halved and height is doubled, then what is the volume of new cone?

168) The diameter of a garden roller is 1.4 m and it is 2 m long. How much area will it level in 5 revolutions?

169) A small village having the population of 5000, requires 75 L of water per head per day. The village has got an overhead tank of measurement 40 m $\times$ 25 m $\times$ 15 m. For how many days will the water of this tank last?

170) Shashi has a piece of canvas whose area is 1102 m^2.She uses it to make a conical tent with base radius 14 m. Wastage in stitching margin and cutting amounts is 2 m^2. Find the volume of the tent that can be made with it. (take, $\sqrt{429}$ = 20.71)

171) Acone is 8.4 cm high and the radius of its base is 2.1 cm. It is melted and recast into a sphere. Then, what is the radius of the sphere?

172) Metallic spheres of radii 6 m, 8 m and 10 m, ,respectively are melted to form a single solid sphere. Find the radius of the resulting sphere.

173) A school provides milk to the students daily in a cylindrical glasses of diameter 7 crn. If the glass is filled with milk upto an height of 12 crn, find how many liters of milk is needed to serve 1600 students?

174) If the volume of a sphere is divided by it s surface area, then the result is 27. Find the radius of sphere.

175) A cone and a cylinder are having equal base radius. Find the ratio of the heights of cone and cylinder, if their volumes are equal.

176) If the radius of a sphere is doubled then find the percentage increase in its volume

177) The radii of two cylinders are in the ratio of 2 : 3 and their heights are in the ratio of 5 : 3. Then, find the ratio of their volumes.

178) The radius and the slant height of a cone are jn the ratio of 4 : 7. If its curved surface area is 792 cm^2 . Then, find the radius.

179) Find the ratio of the curved surface areas of two cones, if the diameters of their bases are equal and slant heights are in the ratio 3 : 4.

180) The height and base diameter of a conical tent is 16 m and 24 m, respectively. Find the cost of canvas required the rate of ~ 210 per m^2 ?

181) We' want to make a closed cylindrical storage tank of height 2 m and base diameter 210 cm from a metal sheet. How many square metres of the sheet are required for the purpose?

182) The total surface area of a solid right circular cylinder is 231 cm^2 . If curved surface area is 2/3rd of the total surface area, then determine the radius of its base.

183) A hemispherical bowl of internal diameter 36 ern contains a liquid. This liquid is filled in cylindrical bottles of radius 3 cm and height 6 cm. How many bottles are required to empty the bowl?

184) Find the radius of a sphere whose surface area is 616 cm^2.

185) A cuboidal block of wood is of dimensions 5 m $\times$ 2 m $\times$ 1 m. Find the number of cubes of dimensions 1 m $\times$ 1 m $\times$ 1 m which can be cut from it.

186) If the volume of the cuboid is 880 cm^3 and the area of its base is 88 cm^2. find the height of the cuboid.

187) What is the volume of a right circular cylinder whose base area is 606 cm^2 and height is 2 m?

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

189) If the curved surface area of a cylinder is 94.2 cm^2 and height is 5 cm, then find radius of its base and volume of the cylinder (use π=3.14).

190) 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.

191) The total surface area of a solid right circular cylinder is 1540 cm^2. If the height is four times the radius of the base, then find the height of the cylinder.

192) Find the radius of the base of a right circular cylinder whose curved surfac area is $\frac{2}{3}$ of the sum of the surface areas of two circular faces. The height of the cylinder is given to be 15 cm.

193) A conical pit of top diameter 7 m is 12 m deep. What is its capacity in litre?

194) The dimensions of a room are 15 m x 10 m x 3 m. It has two doors each of dimension (2 m x 1.5 m) and three windows, each of (1.6 m x 0.75 m.) Find the cost of distempering the walls of the room from inside only at the rate of 6 per m^2.
Hint: Area to be distempered = [Lateral surface area] - [Area of 2-doors] - [Area of 3- windows] Cost of distempering = 6 x [Area to be distempered]

195) Find the total surface area of a cylinder having base diameter as 28 cm and height as 30 cm.

196) 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 $\pi = 3.14$]

197) 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.

198) The edge of a cube is 12 cm. Find its volume.

199) If the diameter of the base of right circular cylinder is 28 cm and its height is 30 cm, then find its volume.

200) If the base radius and height of a cylinder are 7 cm and 13 cm respectively, then find its volume.

201) 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.

202) 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.

203) Find the volume of a sphere whose surface area is 5544 cm^2.

204) The length, breadth and height of a room are 4 m, 3 m and 3 m respectively. Find the lateral surface area of the room.

205) The floor area of a room is 100 m^2 and its height is 8 m. Find its volume.

206) If the total surface area of a cube is 216 cm^2, then find its volume.

207) If the circumference of the base of a right circular cylinder is 110 cm, then find its base area.

208) The curved surface area of a cylinder is 4400 cm^2, If the circumference of its base is 110 cm, then find its height.

209) The radii of two cylinders are in the ratio of 2: 3 and heights are in the ratio af 5: 3. Find the ratio of their volumes.

210) If the radius of a sphere is doubled, then find the ratio of their volumes.

211) If the radius of a sphere is such that $\pi r^2 = 6cm^2$ then find its total surface area.

212) If two cubes of sides 1 cm each are joined end to end then what is the total surface area of the resultant cuboid?

213) If two cubes of sides 1 cm each are joined end to end then what is the volume of the resultant cuboid?

214) The volume of a cube is 8 cm^3 What is its total surface area?

215) The dimensions of a cuboid are l = 4 cm, b = 8 cm, h = 1 cm. How many cubes each of side 1 cm can be cut out of it?

216) What is the number of surfaces having the same area in a cube?

217) What is the number of pairs of surfaces having the same area in a cuboid?

218) Three cubes each of whose side is 1 cm are joined end to end. What are the dimensions of the resultant cuboid?

219) What is the ratio of the area of a face to the total surface area of a cube?

220) The edge of a cube is doubled, what is the ratio of the volume of the resultant cube to the volume of the original cube?

221) What is the number of centimetre cubes in a litre?

222) For a cylinder, if r = h = 7 cm then what is its total surface area?

223) If the radius of cylinder is halved and height is doubled, then what will be the curved surface area?

224) If the radius of a cylinder is doubled and height is halved, then what will be its volume?

225) If the heights of two cylinders are in the ratio of 4 : 3 and their radii are in the ratio of 3: 4 then what is the ratio of their volumes?

226) If the radius of the base of a solid cone is 'r' and its slant height is l then what is its lateral surface area?

227) What is the total surface area of a cone, whose radius = $\frac{r}{3}$ and slant height 31?

228) What is the total surface area of a cone having radius $\frac{r}{2}$ and height 21?

229) If a right circular cone has radius 4 cm and slant height 5 cm then what is its volume?

230) A cone and a cylinder have the same radius of the base. What is the ratio of the volumes of the cylinder and the cone?

231) The radius of a hemisphere is r. What is its volume?

232) What is the total surface area of a hemisphere of radius r?

233) If the radius of a sphere is 2 r, then what is its volume?

234) If the radius of a sphere is doubled, then what is the ratio of their surface area?

235) The dimensions of a rectangular metallic sheet are 48cm x 36cm. From each corner, a square of side 8 cm is cut off and open box is made from the remaining sheet. Find the volume of the box.

236) Two right circular cones of equal curved surface areas have slant heights in the ratio of 3:5. Find the ratio of their radii.

237) In the cylindrical container, the base radius is 8cm. If the height of the water level is 20 cm, find the volume of the water in the container. (Take 1π = 3.142)

238) The dimensions of a hall are 20m x 16m. The sum of the areas of its floor and flat roof is equal to the surface area of its four walls. Find the volume and height of the hall.

239) A well with 10m inside diameter is dug 14m deep. Earth taken out of it is spread all around it to make an embankment of height $4\frac{2}{3}$ Find the width of the embankment.

3 Marks 145 x 3 = 435

240) A plastic box 1.5 m long, 1.25 m wide and 65 cm deep is to be made. It is opened 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.

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

242) 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 15000, find the height of the hall.

243) 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?

244) 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?

245) A small indoor greenhouse (her-barium) 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?

246) Parveen wanted to make a temporary shelter for her car, by making a box-like structure with tarpaulin that covers 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 neligible, how much tarpaulin would be required to make the shelter of height 2.5 m, with base dimensions 4 m $\times$ 3 m?

247) 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.

248) 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 meters of the sheet are required for the same?

249) 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,
(ii) outer curved surface area,
(iii) total surface area.

250) 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.

251) 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.

252) 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.

253) 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?

254) In 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.

255) The students of a 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 cardboard. If there were 35 competitors, how much cardboard was required to be bought for the competition?

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

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

258) 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.

259) 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.

260) 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 π = 3.14).

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

262) 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.

263) A bus stop is barricaded from the remaining part of the road, by using 50 hollow cones made of recycled cardboard. 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 Rs12 per m^2, what will be the cost of painting all these cones? (Use $\pi = 3.14$ and take $\sqrt{1.04} = 1.02$)

264) Find the surface area of a sphere of diameter:
(i) 14 cm
(ii) 21 cm
(iii) 3.5 m.

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

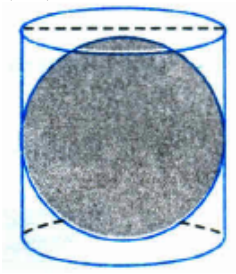
266) The radius of a spherical balloon increases from 7 cm to 14 cm as air is being pumped into it. Find the ratio of surface area of the balloon in the two cases.

267) 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.

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

269) The diameter of the moon is approximately one fourth of the diameter of the earth. Find the ratio of their surface area.

270) A right circular cylinder just encloses 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).



271) 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?

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

273) 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?

274) 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.

275) The capacity of a cuboidal tank is 50000 litres of water. Find the breadth of the tank, if its length and depth are respectively 2.5 m and 10 m.

276) 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?

277) 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.

278) 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?

279) 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.

280) 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 115 cm and
(ii) a plastic cylinder with a circular base of diameter 7 cm and height 10 cm. Which container has greater capacity and by how much?

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

282) 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
(iii) capacity of the vessel.

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

284) 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 od 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.

285) 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 coup the hospital has to prepare daily to serve 250 patients?

286) 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 x 12 cm x 8 cm, then how many bricks would be required?

287) A corn cob (see below figure), shaped somewhat like a cone, has the radius of its broadest end as 2.1 cm and length as 20 cm. If each 1 cm^2 of the surface of the cob carries an average of four grains, then find how many grains you would find on the entire cob?

288) Find the surface area of sphere of radius:
(i) 10.5 cm
(ii) 5.6 cm
(iii) 14 cm.

289) The areas of three adjacent faces of a cuboid are 15 sq cm, 20 sq cm and 12 sq cm. Find the volume of the cuboid.

290) The total surface area of a cube is 726 cm^2. Find its volume.

291) The height of a right circular cylinder is 16 cm and its base radius is 12 cm. Find the total surface area and volume of the cylinder in terms of π .

292) The radius and height of a right circular cylinder are in the ratio of 2: 3. If the volume of the cylinder is 1617 cm^3, then find the radius and height of the cylinder.

293) Sheena has a piece of canvas, whose area is 550 m^2. She uses it to have a conical tent made with a base radius 7 m. Find the volume of tile tent that can be made with it. (Use $\pi = \frac{22}{7}$)

294) Find the volume of a cylindrical tank of height 1.4 m and circumference of base is 2 π m.

295) The curved surface area and volume of a pillar are 264 m^2 and 396 m^3 respectively. Find the diameter and height of the pillar.

296) A hemispherical bowl made of brass has inner radius 10.5 cm. Find the cost of polishing it on the inside at the rate of Rs 0.12 per sq. cm.

297) The curved surface area of a right circular cylinder is 4.4 m^2. If the diameter of the base of the cylinder is 1.4 m, find its volume. (Take $\pi = \frac{22}{7}$)

298) Find the volume of the largest right circular cone that can be cut off from a cube whose edge is 9 cm. (Use $\pi = \frac{22}{7}$)

299) How many square meters of canvas is required for making a conical tent where height is 3.5 m and the radius of the base is 12 m? (Use $\pi = \frac{22}{7}$)

300) A military tent is in the form of a right circular cone of vertical height 9 m, the diameter of the base being 10.5 m. If 18 soldiers can sleep in it, find the average cubic meters of air space available to each soldier.

301) How many meters of cloth 4 cm wide, will be required to make a conical tent, the radius of whose base is 600 cm and height is 8 m. (Use $\pi = 3.14$).

302) The floor of a rectangular hall has a perimeter 110 m. If the cost of painting the four walls at the rate of Rs 10 per m^2 in Rs 13200, find the height of the hall.

303) The curved surface area of a cylindrical pillar is 264 m^2 and its volume is 924 m^3. Find the diameter and height of the pillar. (Use $\pi = \frac{22}{7}$)

304) A cylindrical tube opened at both ends is made of iron sheet which is 2 cm thick. If the outer diameter is 16 cm and its length is 100 cm, find how many cubic centimeters of iron has been used in making a tube? (Use $\pi = \frac{22}{7}$)

305) A wall 4 m long, 3 m height and 13 cm thick is made up of bricks each measuring 20 cm $\times$ 12 cm $\times$ 6.5 cm. Find the number of bricks required to build the wall.

306) Find the total surface area and volume of a hemisphere of radius $\sqrt{3}$ a units.

307) The water for a factory is stored in a hemispherical tank whose internal diameter is 14 m. The tank already contains 50 kiloliters of water. Water is pumped into the tank to fill its capacity. Calculate the volume of water pumped into the tank. (Use $\pi = \frac{22}{7}$)

308) A hollow right circular cylindrical copper pipe is 21 cm long. Its outer and inner diameters are 10 cm and 6 cm respectively. Find the volume of copper used in making the pipe. (Use $\pi = \frac{22}{7}$)

309) A joker's cap is in the form of a right circular cone of base radius 7 cm are height 24 cm. Find the area of sheet required to make 20 such caps. (Take $\pi = \frac{22}{7}$)

310) A river 3 m deep and 40 m wide is flIowing at the rate of 2 km/hour. How much water will fall into the sea in 2 minutes.

311) Monica has a piece of canvas whose area is 818 m^2. She uses it to have a conical tent made, with a base radius of 10 m. Assuming that all the stitching margin and the wastage incurred while cutting amounts to approximately 1.6 m^2, find the volume of the tent that can be made with it. (Use $\pi = 3.14$)

312) $\frac{3}{4}$ th of a cylindrical can contains milk. The height of the can is 1.4 m and radius is 0.4 m. This milk is poured into small cylindrical glasses of height 10 cm and radius 5 cm. How many small glasses are needed to empty the can?

313) 50 circular plates, each of radius 7 cm and thickness $\frac{1}{2}$ cm are placed one above another to form a solid right circular cylinder. Find the total surface area and the volume of the cylinder so formed.

314) Lead spheres of diameter 6 cm each are dropped into a cylindrical beaker containing some water and are fully submerged. If the diameter of the beaker is 18 cm and water level rises by 40 cm, find the number of lead spheres dropped in the water.

315) The length, breadth and height of a cuboid are 8 m, 6 m and 4 m, respectively. Find its total surface area, diagonal and area of four walls.

316) The dimensions of a cuboid are in the ratio 1:2 :3 and its total surface area is 88 m^2.Find the dimensions of the cuboid.

317) A cuboidal oil tin is 30 cm x 40 cm x 50 cm. Find the cost of the tin required for making 20 such tins, if the cost of tin sheet is Rs 20 per sq m.

318) The dimension of a rectangular box are in the ratio 2: 3: 4 and the difference between the cost of covering it with sheet 0 paper at the rate of Rs 4 and Rs 4.50 per sq m is Rs 416 Find the dimensions of the box.

319) Find the surface area and diagonal of a cube whose edge is 11 cm.

320) The total surface area of a cube is 486 cm^2. Find its lateral surface area.

321) A cuboidal water tank is 4 m long, 5 m wide and 8 m deep. How many Iitres of water can it hold?

322) The areas of three adjacent faces of a cuboid are x, y and z. If its volume is V, then find its volume.

323) Find the surface area and the length of the diagonal of a cube, if the volume of a cube is 2197 cu cm.

324) The ratio between the curved surface area and the total surface area of a right circular cylinder is 1 : 3. Find the ratio between the height and radius of the cylinder.

325) A rectangular sheet of paper 44 cm x 18 cm is rolled along its length and a cylinder is formed. Find the radius of the cylinder.

326) An iron pipe 20 cm long has exterior diameter equal to 25 cm. If the thickness of the pipe is 1 cm, then find the wh le surface area of the pipe.

327) The cost of painting the outer curved surface of a cylinder at Rs 1.50 per cm2 is Rs 660. If the height of the cylinder is 2 m. Then, find the curved surface of the base of cylinder.

328) Find the capacity of a cylindrical storage tank of height 4 m and base diameter 8 m.

329) A cylindrical bucket of diameter 28 cm and height 12 cm is full of water. The water is emptied into a rectangular tub of length 66 cm and breadth 28 cm, then find the height of water rises in the tub.

330) The difference between outside and inside surfaces of a cylindrical metallic pipe 14 cm long is 44 cm^2 .If the pipe is made of 88 cm^3 of metal.Find outer and inner radii of the pipe.

331) The diameters of two cones are equal. If their slant heights are in the ratio 5:4, then find the ratio of their curved surface areas.

332) The radius and the height of a right circular cone are in the ratio 5:12, respectively. If its volume is 314 m^3, then find its slant height and the radius.

333) A conical tent is to accommodate 11 persons. Each person must have 4 sq m of the space on the ground and 20 cu m of air to breathe. Find the height of the cone.

334) Find the surface area of a sphere having diameter 30 cm.

335) A hemispherical bowl is made from a metal sheet having thickness 0.3 cm. The inner radius of the bowl is 24.7 cm. Find the cost of polishing its outer surface at the rate of Rs 4 per 100 cm^2(take, π = 3.14)

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

337) How many balls each of radius 2 cm can be made by melting a big ball whose radius is 8 cm?

338) A copper sphere of diameter 18 cm is drawn into a write of diameter 4mm. Then, find the length of the wire.

339) The volume of two hemispheres are in the ratio 8 : 27. What is the ratio of their radii?

340) A cylindrical tub of radius 16 cm contains water to a depth of 30 m. A spherical iron ball is dropped into the tub an thus level of water is raised by 9 cm. What is the radius of the ball?

341) A cellphone has dimensions 10 crn x 5 cm x 2 cm. How many cell phones can be arranged in a box of dimension 10 cm x 10 cm x 15 cm?

342) Find the area of the metal sheet required to make two closed hollow cones each of height 24 cm and slant height 25 cm.

343) A cylindrical roller 2.5 m in length, 1.75 m in radius when rolled on a road was found to cover the area of 5500 m^2 . How many revolutions did it make?

344) The floor of a rectangular hall has a perimeter 120 m. If the cost of painting the four walls at the rate of Rs 10 per m^2 is Rs 6000, then find the height of the hall.

345) The sum of the base radius and height of a solid cylinder is 37 cm. If the total surface area of the solid cylinder is 1628 cm^2 , then find its height.

346) The inner diameter of a circular well is 2 m and its depth is 10.5 cm. Find
(i) the inner curved surface area of the well.
(ii) the cost of plastering this curved surface area at the rate of Rs 2310 per m^2

347) Find the cost of sinking a tube well 280 m deep having diameter 3 m at the rate of Rs 3.60 per m^3

348) 27 solid iron spheres, each of radius 2 cm are melted to form a new solid sphere. What will be the surface area of the new sphere?

349) The diameter of the roller 120 cm long is 84 cm. If it takes 500 complete revolutions to level a playground, then find the cost of levelling at the rate of 30 paise per m^2

350) A cube of 9 cm edge is immersed completely in a rectangular vessel containing water. If the dimensions of base are 15 cm and 12 cm. Then, find the rise in water level in the vessel.

351) Metal spheres, each of radius 2 ern are packed into a rectangular box of dimensions 16 cm x 8 cm x 8 cm. When 16 spheres are packed in the box, it is filled with preservative liquid. Find the volume of this liquid to the nearest integer.

352) The radius of sphere is 5 cm. If the radius is increased by 20%, then find by how much per cent volume is increased?

353) If the radius of a sphere is doubled, then find the percentage increase in its volume

354) Find the number of planks of dimensions (4m x 50 mx 20 cm)that can be stored in a pit, which is 16m long, 12m wide and 4 m deep.

355) 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?

356) A solid cube is cut into two cuboids of equal volumes. Find the ratio of the total surface area of the given cube and that of one of the cuboids

357) A semi-circular sheet of metal of diameter 28 cm is bent to form an open conical cup. Find the capacity of the cup.

358) How many litre of milk can a hemispherical bowl of diameter 10.5 cm hold?

359) A cuboidal water tank is 6 m long, 10 m wide and 4.5 m deep. How many litres of water it can hold?

360) A shot-put is a metallic sphere of radius 3.5 cm. If the density of the metal is 7.8 g per cm^3, find the mass of the shot-put.(Take π =22/7)

361) A shot-put is a metallic sphere of radius 4.9 cm. If the density of the metal is 7.5 g per cm^3, find the mass of the shot-put.

362) The length, breadth and height of a rectangular box are as 1:2:3. Find the volume of the box, when its surface area is 1078 sq.m.

363) A solid piece of metal, cuboidal in shape, with dimensions 24 cm, 18 cm and 14 cm is recast into a cube. calculate the lateral surface area of the cube.

364) the length, breadth and height of a room are 6 m, 4 m and 3 m respectively. Find the cost of white washing the four walls of the room at the rate of Rs 12 per m^2. The room has an entrance door mearuring 2.5 m $\times$ 1 m which is not to be white washed.

365) A dome of a building is in the form of a hemisphere. From inside, it was white washed at the cost of Rs. 997.92. If the casot of white washing is 400 paisa per square meter, find the volume of air inside the dome. $\left(Take\ \pi = \frac{22}{7}\right)$

366) A box with lid is made out of 2 cm thick wood. Its inner dimensions are 21 cm, 14 cm and 11 cm. Its external length, breadth and height are 25 cm, 18 cm, and 15 cm respectively. find the capacity of the box and volume of the wood used.

367) The total cost of making a solid spherical ball is Rs 33,957 at the rate of Rs 7 per cubic metre. Find the radius of this ball.

368) The internal and external diameters of a hollow hemispherical vessel are 24 cm and 25 cm respectively. If the cost of painting 1 cm^2 of the surface area is Rs 0.05, find the total cost of painting the vessel all over.

369) The radius and height of a cylinder are in the ratio 5:7. If its volume is 4400 cm^3, find radius of the cylinder.

370) A rectangular sheet of metal foil with dimension 66 cm by 12 cm is rolled to form a cylinder of height 12 cm. Find the volume of the cylinder.

371) The radius and height of a right circular cone are in the ratio 4:3 and its volume is 2156 cm^3. Find the curved surface area of the cone.

372) Bhavya has a piece of canvas whose area is 552 m^2. She uses it to make a conical tent with a base radius of 7 m. Assuming that all the stiching margins and the wastage incurred while cutting amounts to approximately 2 m^2. Find the volume of the tent that can be made with it. $\left(Take\ \pi = \frac{22}{7}\right)$

373) How many metre of cloth $1\frac{4}{7}$ m wide will be required to make a conical tent whose base diameter is 10 m and vertical height is 12 m?

374) The difference between the outside and inside surface of a cylindrical metallic pipe 14 cm long is 44 cm^2. If the pipe is made of 99 cm^3 of metal, find the outer and inner radii of the pipe.

375) The surface area of a sphere of radius 5 cm is five times the area of the curved surface of a cone of radius 4 cm. Find the height and the volume of the cone (taking π = $\frac{22}{7}$).

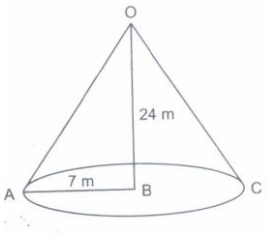
376) The radius of a sphere is increased by 10%. Prove that the volume will be increased by 33.1% approximately.

377) Find the slant height of a cone whose radius is 7 cm and height is 24 cm.

378) The radius of a cylinder is 7cm. If its volume is 2002 cm^3, then find its height and total suface area.

379) The diameter of a road roller, 120 cm long is 84 cm. If it takes 500 complete revolutions to level a playground, find the cost of levelling it at 2 per square metre.

380) A conical tent of radius 7 m and height 24 m is to be made. Find the cost of the 5 m wide cloth required at the rate of ₹50 per metre.



381) How many lead balls, each of radius 1 cm, can be made from a sphere of radius 8 cm?

382) A brick measures 30 cm x 10 cm x $7\frac{1}{2}$ cm. How many bricks will be required for wall 30 m long, 2 m high and $\frac{3}{4}$ m thick?

383) The surface area of a cube is $18\frac{3}{8}$ m^2. Find its volume.

384) A hemispherical tank is emptied by a pipe at the rate of litres per minute. How long will it take to half empty the tank if it is $1\frac{1}{2}$ metre in diameter [Take π = 272 and 11 = 1000 cm^3]

4 Marks 168 x 4 = 672

385) 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.

386) 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 .

387) Find the surface area of a sphere of radius
(i) 10.5 cm
(ii) 5.6 cm
(iii) 14 cm

388) 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 x 20 cm x 5 cm and the smaller of dimensions 15cm x 12cm x 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, then find the cost of cardboard required for supplying 250 boxes of each kind.

389) 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.

390) 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? (1000cm^3 = 1 L)

391) 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 1cm^3 of wood has a mass of 0.6 g.

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

393) The height of a cone is 15 cm. If its volume is 1570 cm^3, then find the radius of the base (take, π=3.14)

394) If the volume of a right circular cone of height 9 cm is $48\pi\ cm^3$, then find the diameter of its base.

395) A conical pit of top diameter 3.5 m is 12 m deep. What is its capacity (in litre)?

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

397) If the Δ ABC in the question 7above is revolved about the side 5 cm, then find the volume of the solid so obtained. Also, find the ratio of volumes of the two solids obtained.

398) 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.

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

400) Find the amount of water displaced by a solid spherical ball of diameter
(i) 28 cm.
(ii) 0.21 m.

401) 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?

402) How many litres of milk can a hemispherical bowl of diameter 10.5 cm hold?

403) 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.

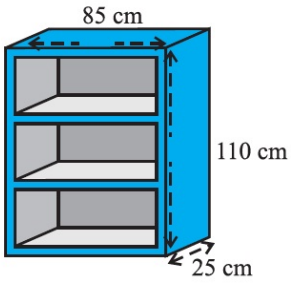
404) Find the volume of a sphere whose surface area is 154 cm^2.

405) A dome of a building is in the form of a hemisphere. From inside, it was white-washed at the cost of Rs. 4989.60. If the cost of white-washing is Rs.20 per square metre, find the
(i) inside surface area of the dome,
(ii) volume of the air inside the dome.

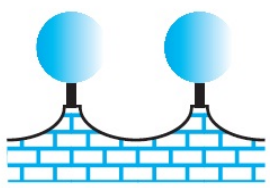
406) Twenty seven solid iron spheres, each of radius rand surface area S are melted to form a sphere with surface area S. Find the
(i) radius r' of the new sphere.
(ii) ratio of S and S'.

407) 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?

408) A wooden bookshelf has external dimensions as follows: Height = 110cm, depth = 25cm, breadth = 85cm (see figure). The thickness of the plank is 5 cm everywhere. The external faces are to be polished and the inner faces are to be painted. If the rate of polishing is 20 paise per cm^2 and the rate of painting is 10 paise per cm^2, then find the total expenses required for polishing and painting the surface of the bookshelf.



409) The front compound wall of a house is decorated by wooden spheres of diameter 21 cm, placed on small supports as shown in 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.



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

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

412) Two cubes of side 6 cm each, are joined end to end. Find the surface area of the resulting cuboid.

413) A closed iron tank 12 m long, 9 m wide and 4 m deep is to be made. Determine the cost of iron sheet used at the rate of Rs 50 per metre, the sheet being 2 m wide.

414) The length of a hall is 20 m and width 16 m. The sum of the areas of the floor and the flat roof is equal to the sum of the areas of the four walls. Find the height of the hall.

415) A table cover 4 m $\times$ 2 m is spread on a table. Find the cost of polishing the top of the table at Rs 40 per square metre if 25 cm table cover is hanging all round the table.

416) A classroom is 7 m long, 6.5 m wide and 4 m high. It has one door 3 m $\times$ 1.4 m and three windows each measuring 2 m $\times$ 1 m. The interior wall is to be colour washed. Find the cost of colour washing at the rate of Rs 3.50 per m^2.

417) The cost of preparing the four walls of a room at 70 paise per square metre is Rs 157.50. The height of the room is 5 metres. Find the length and the breadth of the room if they are in the ratio 4 : 1.

418) The dimensions of a rectangular box are in the ratio of 2 : 3 : 4 and the difference between the cost of covering it with sheet of paper at the rates of Rs 8 and Rs 9.50 per m^2 is Rs 1248. Find the dimensions of the box.

419) A cast-iron pipe has an external diameter of 75 mm. If it is 4.2 m long, find the area of the outer surface. $\left[Assume \pi = \frac{22}{7}\right]$

420) Find the curved surface area of a closed cylindrical petrol storage tank that is 3.8 m in diameter and 4.9 m in height.

421) A cylinder 3 m high, is open at the top. The circumference of its base is 22 cm. Find its total surface area. $\left(Take \pi = \frac{22}{7}\right)$

422) Twenty cylindrical pillars of a building are to be cleaned. If the diameter of a pillar is 0.5 m and height is 4 m, what will be the cost of cleaning them at the rate of Rs 3 per m^2. $(Take \pi = 3.14)$

423) 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 Rs 14 per square metre?

424) A cylindrical vessel, without lid, has to be tin-coated including both of its sides. If the radius of its base is $\frac{1}{2}m$ and its height is 1.4 m, calculate the cost of tin-coating at the rate of Rs 50 per 1000 cm $(Use \pi = 3.14)$

425) The diameter of roller 1.5 m long is 84 cm. If it takes 100 revolutions to level a playground, find the cost of levelling this ground at the rate of 50 paise per square metre.

426) Find the ratio of the curved surface areas of two cones if their diameters of the bases are equal and slant heights are in the ratio 4 : 3.

427) Find the area of the metal sheet required to make two closed hollow cones each of height 24 cm and slant height 25 cm.

428) The radius and vertical height of a cone are 5 cm and 12 cm respectively. Find the curved surface area.

429) The curved surface area of a right circular cone is 12320 cm^2. If the radius of its base is 56 cm, find its height.

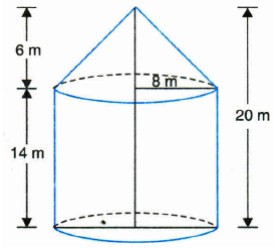
430) Find the total surface area of a cone whose radius is $\frac{r}{2}$ and slant height is 21.

431) The circumference of the base of a 10 m high conical tent is 44 m. Calculate the length of the canvas used in making the tent if width of the canvas is 2 m.

432) CSA of an ice cream cone of slant height 12 cm is 113.04 cm^2, Find the base radius and height of the cone. (π = 3.14)

433) How many metres of cloth of 1.1 m width will be required to make a conical tent whose vertical height is 12 m and base radius is 16 m? Find also the cost of the cloth used at the rate of Rs 14 per metre.

434) A cylindrical tent has a conical top with dimension as shown in the figure. Calculate the total cost of the canvas required to make the tent, if the cost of canvas is Rs 50 per sq. m.



435) If the radius of a sphere is halved then what is the decrease in its surface area?

436) A hemispherical bowl made of steel is of 1 cm thickness. The inner radius of the bowl is 6 cm. Find the total surface area of the bowl, in terms of π.

437) The surface area of a sphere of radius 5 cm is 5 times the area of the curved surface of a cone of radius 4 cm. Find the height of the cone.

438) The external and internal diameters of a hollow hemi-spherical vessel are 16 cm and 12 cm respectively. The cost of painting 1sq. cm of surface is Rs 2. Find the cost of painting the vessel all over. $\left(\pi = \frac{22}{7}\right)$

439) An underground water tank is in the form of a cuboid of edges 48 m, 36 m and 28 m. Find the volume of the tank.

440) Three cubes of edge 12 cm are joined together (end to end). Find the volume of the resulting cuboid.

441) Find the length of the longest rod that can be placed in a room 12 m $\times$ 9 m $\times$ 8 m.

442) A rectangular metallic sheet has dimensions 48 cm $\times$ 36 cm. From each of its corners, a square of side 8 cm is cut off and an open box is made from the remaining sheet, find the volume of the box.

443) A teak wood is cut first in the form of a cuboid of length 2.3 m, width 0.75 m and of a certain thickness. Its volume is 1.104 m^3. Find the thickness of the cuboid. How many rectangular planks of size 2.3 m $\times$ 0.75 m $\times$ 0.04 m can be cut from the cuboid?

444) A vessel is in the shape of a cone. Radius of the broader end is 2.1 cm and height is 20 cm. Find the volume of the vessel.

445) Find the volume of the largest right circular cone that can be placed in a cube of edge 7 cm.

446) A right Δ ABC with sides 24 cm, 7 cm and 25 cm is revolved about the side 7 cm. Find the volume of the solid so formed. If the triangle is revolved about its hypotenuse, what are the slant heights of the double cone thus generated.

447) If v is the volume of a cuboid of dimensions a, b and s is its surface area, then prove that $\frac{1}{v} = \frac{2}{s}(\frac{1}{a} + \frac{1}{b} + \frac{1}{c})$

448) The areas of three adjacent faces of a cuboid are p, q and r. If its volume is v, prove that v^2 = pqr

449) The length, breadth and height of a cuboid are 20 m, 24 m, 12 m respectively. The dimensions of length, breadth and depth are increased by 15 %, 25 % and 50 % respectively. What is the ratio between the volume of the original cuboid and the new cuboid?

450) How many bricks each measuring 18 cm x 12 cm 10 cm will be required to build a wall 12 m long, 6 m wide and 4.5 m high when $\frac{1}{10}$ of its volume is occupied by mortar? Find also the cost of bricks at Rs 225 per 100 bricks.

451) Two cylindrical cans have bases of the same size. The diameter of each is 14 cm. One of the cans is 10 cm high and the other is 20 cm high. Find the ratio of their volumes.

452) A square piece of paper of side 22 cm is rolled to form a cylinder.Find the volume of the cylinder. (Take $\pi = \frac{22}{7}$)

453) 1.1 cu.cm of copper is to be drawn into a cylindrical wire 0.5 cm in diameter. Calculate the length of the wire.

454) The volume of a cylinder $448\pi\ cm^3$ is and height 7 cm. Find its lateral surface area and total surface area.

455) The diameter of the base of a right circular cylinder is 28 cm and its height is 21 cm. Find its (i) curved surface area (ii) total surface area and (iii) volume.

456) Coins of same size are placed one above the other and a cylindrical solid block is formed.The volume of this block is 49.28 cm^3. Diameter of each coin is 2.8 cm and thickness 0.2 cm. Find the number of coins arranged in the block. ($\pi = \frac{22}{7}$)

457) The area of the base of a right circular cylinder is 15400 cm^2 and its volume is 92400 cm3. Find the height of the cylinder and also find curved surface of the cylinder.

458) A rectangular piece of paper is 22 cm long and 12 cm wide. A cylinder is formed by rolling the paper along its length. Find the volume of the cylinder. (Use $\pi = \frac{22}{7}$)

459) A River 4 m deep and 60 m wide is following at the rate of 0.31 km/ hour. How much water will fall into the sea in a minute?

460) A hollow cylindrical copper pipe is 21 cm long. Its outer and inner diameters are 10 cm and 6 cm respectively. Find the volume of copper used in making the pipe.

461) A powder tin has a square base with side 8 cm and height 13 cm. Another is cylindrical with the radius of its base 47 cm and its height 15 cm. Find the difference in their capacities. (Use $\pi = \frac{22}{7}$)

462) What is the mass of a metallic hollow cylindrical pipe 24 cm long with internal diameter 10 cm and made up of metal 5 mm thick. Density of the metal is 7 g per cm^3

463) A well with 10 m inside diameter 10 m deep. Earth taken out of it is spread all around it to a width of 5 m to form an embankment. Find the height of the embankment.

464) The difference between outside and surface of a cylindrical metallic pipe 14 cm long is 44 cm^2. If the pipe is made of 99 cm^3 of metal, find the outer and inner radii of the pipe.

465) Rainwater which falls on a flat rectangular surface of length 6 cm and breadth 4 cm is transferred into a cylindrical vessel of internal radius 20 cm. What will be the eight of water in the cylindrical vessel if the rainfall is 1 cm? Give your answer to the nearest whole number. (Use $\pi = 3.14$)

466) Find the lateral surface area of the cuboid of dimensions 80 cm $\times$ 40 cm $\times$ 20 cm.

467) A box of dimensions (2 m $\times$ 1.25 m $\times$ 85 cm) is to be made. Determine the area of the sheet require when the box is open at the top.

468) If the length of diagonal of a cube is $8\sqrt{3}$ cm. then find its surface area.

469) The lateral surface area of a cube is 512 cm^2.Find the side of the cube.

470) A cuboidal water tank can hold 50000 L of water. If the length and depth of tank are 250 cm and 10 m respectively, then find the breadth of the tank.

471) Volume of a cube is $648\sqrt{3}$ cm^3 . Find its total surface area.

472) The perimeter of one face of a cube is 40 m. Find the volume of the cube.

473) If the curved surface area of a cylinder 1760 cm^2 and its base radius is 14 cm. Then, find its height.

474) The heights of two cylinders are in the ratio 5 : 3 and their radii are in the ratio 2 : 3. Then, find the ratio of their curved surface area.

475) A rectangular paper 11 cm by 8 cm can be exactly wrapped to cover the curved surface of a cylinder of height 8 cm. Find the volume of the cylinder.

476) The internal and external diameter of steel pipe of length 140 cm are 8 cm and 10 cm. respectively. Then, find the volume of steel.

477) In a cylinder, if radius is halved and height is doubled, then find its volume.

478) Calculate the volume of a right circular cylinder with base radius 14 cm and height 14 cm.

479) Volume of soild cylinder is 6237 cm^2. Find the radius, if its height is 4.5 cm.

480) The radius and the height of a cylinder are in the ratio 5 : 7 and its volume is 550 cm^3 . Find its radius.

481) The area of the curved surface of a right circular cylinder is 4400 cm^2 and the circumference of its base is 110 cm. Find the height of the cylinder.

482) The diameter of base and height of a cone is 14 cm and 24 cm, respectively. Find curved surface area of the cone.

483) Find the curved surface area of a cone whose circumference of the base and slant height are 88 cm and 2 cm, respectively.

484) Find the curved surface area of a cone whose area of the base and height are 154 cm^2 and 24 cm, respectively.

485) The circumference of the base of 16 m high solid cone is 33 m. Find the total surface area of the cone. (take, π = 22/7)

486) If height and volume of a cone are 15 cm and 500 $\pi\, cm^2$ respectively, then find the radius of base of the cone.

487) If the volume and the base area of a right circular cone are 48π cm^3 and 12π cm^2 respectively, then find the height of the cone.

488) If the height and the radius of a cone are tripled, then find the ratio of volume of new cone and of that of original cone.

489) Find the capacity (in litre) of a conical vessel having height 8 cm and slant height 10 cm.

490) How much ice-cream can be put into a cone with base radius 3.5 cm and height 12 cm?

491) A toy is in the form a hemisphere of radius 3.5 cm. Find the curved surface area and total surface area.

492) The radius of the moon is approximately one-fifth of the radius of the planet. Find the ratio of their surface areas.

493) Find the volume of the sphere whose diameter is 2.1 m.

494) If the radius of a hemisphere is 7 cm. Find its volume. $\left(take, \pi = \frac{22}{7}\right)$

495) The circumference of the edge of a hemispherical bowl is 132 cm. Find the volume of the bowl.

496) If the radius of a sphere is doubled, then find the ratio of volume of the new sphere that of the original sphere.

497) If the radius of a sphere is triple, what is the ratio of the volume of the first sphere to that of the second?

498) The volume of two spheres are in the ratio 64 : 27. Find the ratio of their radii.

499) 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, then find its height.

500) Find the capacity (in litre) of a conical vessel with
(i) radius 7 cm and slant height 25 cm.
(ii) height 12 cm and slant height 13 cm.

501) The diameter of a roller, is 91 cm and its length is 1.6m. If it makes 600 revolutions to level a field, then find the cost of levelling at the rate of 70 paise per m^2.

502) 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?

503) The internal and external radii of a hollow hemispherical bowl are 15 cm and 16 cm respectively. Find the cost of painting the bowl at the rate of 35 paise per cm^2, if
(i) the area of the edge of the bowl is ignored.
(ii) the area of the edge of the bowl is taken into account.

504) A cube and cuboid have same volume. The dimensions of the cuboid are in the ratio 1: 2: 4. If the difference between the cost of polishing the cube and cuboid at the rate on Rs 5 per m^2 is Rs 80, then find their volumes.

505) A woodcutter desires to make dusters for schools. He plans to make duster of dimensions 10 cm $\times$ 4 cm $\times$ 3 cm. How many dusters can be made from a wooden plank of dimensions 4 m $\times$ 3 m $\times$ 1 m?

506) The height and the base diameter of a conical tomb are 24 m and 14 m. respectively. Find the cost of white-washing its curved surface at the rate of Rs 210 per 100 sq m. Also, find volume of air inside the tomb.

507) Calculate the curved surface area and total surface area of a cone, whose radius of the base and height are in the ratio 5: 12 and its volume is 2512 cu cm. (take,π = 3.14)

508) Along a path, 100 conical pillars are constructed. Each pillar has base radius 14 cm and height 18 cm. Find the total cost of painting these pillars at the rate of Rs 120 per m^2. (take,π = 22 / 7)

509) A hemispherical bowl is made of 0.50 cm thick brass. The inner radius of the bowl is 6 cm. Find the inner and outer curved surface areas and volume of the bowl.

510) A spherical ball is divided into two equal halves. If the curved surface area of each half is 56.57 cm^2 . then find the volume of the spherical ball.

511) The volume of the two spheres are in the ra tio 64 : 27. Find the ratio of their surface areas.

512) Rain water falls on a flat rectangular surface of length 6 m and breadth 4 m is transferred into a cylindrical vessel of internal radius 20 cm. What will be the height of water in the cylindrical vessel of the rain fall in 1 cm. Give your answer to the nearest whole number. [take, π = 3.14]

513) A conical heap is formed when a farmer pours food grains on a ground. The slant height of heap is 35 cm. The circumference of the base is 132 cm. What amount of tarpaulin is needed to cover the grains? Farmer goes to the orphanage and gives half of the food grains for the children living there. How much grains farmer donoted? List values you learn from this act of the farmer.

514) (i) A village having a population of 1500 needs, 120 L of water per head per day. It has a tank measuring 20 m x 15 m x 6 m full of fresh water. Due to some fault, the tank is not getting the water. For how many days will the water of this tank last?
(ii) If the fault is not removed and there is water in the tank even after 5 days. Will you recommend villagers to drink this stagnent and stale water?

515) Deepika on her way to home saw some homeless persons sleeping in the park in a winter night. She gave them a canvas of area 551 m . They uses it to make a conical tent with a base radius of 7 m. Assuming that all the stiching, margin and wastage incurred while cutting, amounts to approximately 1 m ,find volume of the tent that can be made with it. Which value is depicted by Deepika?

516) A resident building was on the fire. A fire fighting truck is coming for their rescure containing water in cylindrical shaped tank. How much water does it contain, if the whole water is used to extinguish all the fire which is spread in 2904 m area and 10 L
water is needed to extinguish 1m area. A fire fighter risked his life to rescue 17 children and 4 adults and save them.
(i) If water is full to the brim in the tank and its radius is 1 m, find its height. (1 m = L)
(ii) Which value is depicted by fire fighter?

517) In a Govt. school. the teacher organised a competition in which students were asked to use cardboard for making cylindrical pen stands of radius 4 em and
height 25 cm.
(i) To supply the cardboard to the 350 competitors, find the cost of cardboard required, if cost of 1 m is ~ 1.50? These pen stands will be sold and amount so collected will be donated to PM relief fund.
(ii) What value is depicted in this context?

518) Following a lecture on waste management, a school decided to keep two dust bins in each class, one for biodegradable and other for non-biodegradabls waste. One of the dustbins is cylindrical in shape with radius 35 cm and height 40 em. while the other is cuboidal in shape with dimensions 30 cm x 30 cm x 50 cm.
(i) Which dustbin would occupy less base area?
(ii) Which dustbin has more capacity?
(iii) By using these dustbins. what values does the school want to instil amongst the students?

519) Volume of a right circular cone is 2200 / 7 cm^2 and its diameter is 10 cm. Find its curved surface area $\left(take, \pi = \frac{22}{7}\right)$

520) Two hemispherical domes are to be painted as shown in the adjoining figure. If the circumferences of the bases of the domes are 17.6 cm and 70.4 cm respectively, then find the cost of painting at the rate of Rs 10per cm^2

521) If the height of a cone is doubled, then find the percentage increase in its volume

522) Circumference of the base of a cylinder, open at the to is 132 cm. The sum of radius and height is 41 em. Find the cost of polishing the outer surface area of cylinder at the rate Rs 10 per sq dm (decimetre) $\left(use\ \pi = \frac{22}{7}\right)$

523) A right circular cone is 5.4 cm high and radius of its base is 2 ern. It is melted and recast into another right circular cone with radius of base as 1.5 cm .Find the height of the new cone formed.

524) A solid cylinder has a total surface area of 231 m^2 Its curved surface area is $\frac{2}{3}$ of the 3 total surface area. Then, find the volume of the cylinder.

525) A sector of a circle of radius 9 cm and central angle of 120°. It is rolled up so that the two bounding radii are joined together to form a cone. Find
(i) the slant height of the cone.
(ii) the radius of the base of the cone.
(iii) the volume of the cone.
(iv) the total surface area of the cone.

526) The diameter of a solid metallic right circular cylinder is equal to its height. After cutting out the largest possible solid sphere S from this cylinder, the remaining material is recast to form a solid sphere S1' What is the ratio of the radius of sphere to that of sphere S_1

527) 50 students of class X planned a visit to an old 'age home and to spend the whole day with its inmates. Each one prepared a cylindrical flower base using cardboard to gift the inmates. The radius of cylinder is 4.2 cm and the height is 11.2 cm.
(i) What is the amount spent for purchasing the cardboard at the rate of Rs 20 per $100m^2$?
(ii) Which value is depicted by the students?

528) In a flood hitted area, volunteers of NSS erected a conical tent made of tarpaulin. The vertical height of the conical tent is 4 m and the base diameter is 6 m. If the width of tarpaulin is 1.5 m, then
(i) find the length of the tarpaulin used, assuming that 10% extra material is required for stitching margins and wastage in cutting. (take, 1t = 3.14)
(ii) which values is depicted by the volunteers?

529) A hemispherical bowl is made of 0.2 cm thick steel. the inner diameter of the bowl is 8 cm. Also, find outer curved surface area of the bowl. also, find the cost of polishing its outer surface at the rate of Rs 2 per cm^3 (Take $\pi = \frac{22}{7}$)

530) A closed cubical box of edge 20 cm is made up of wood of thickness 2 cm. Find the:
(i) Volume of the wood used to make it.
(ii) volume of air trapped in it.

531) A teak wood log is in the form of cuboid of length 2.3 m, width 75 cm and of certain thickness. Its volume is 1.104 cu.m. How many rectangular planks of size 2.3 m $\times$ 72 cm $\times$ 4 cm can be cut from the cuboid?

532) An open box is made of wood 3 cm thick. Its external dimensions are 1.4 m and 1.1 m & 0.8 m. Find the cost of painting the outer surface of box at 75 paise per 100 cm^2.

533) The cost of papering the walls of the room 12 m long at the rate of Rs 1.35 per m^2 is Rs 340.20 and the cost of matting the floor at the rate of 85 paisa per m^2 is Rs 91.80 find the height of the room.

534) A village has a polpulation of 4000 people. 60 litres of water is required per person per day. The village tanker of water is cuboidal in shape with dimensions 48 m $\times$ 27 m $\times$ 5 m which is completely filled with water. for how many days the water of this is sufficient?

535) The length and breadth of a hall are in the ratio 4:3 and its height is 550 cm. The cost of decorating its height is 550 cm. the cost of decorating its walls on Diwali (including doors and windows) at Rs. 6.60 per square meters is Rs 5082. Find the length and breadth of the room.

536) 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 area [surface area of 8 new cubes and the original cube]

537) The water for a industry is stored in a hemispherical tank of internal diameter 14 m. The tank contains 40 Kilolitres of water. Water is pumped into the tank to fill it to full capacity. Calculate the volume of water pumped into the tank.

538) The ratio of dimensions of a cuboidal box is 2:3:4. the difference between the cost of wrapping the box at the rate of Rs 4 per square meter and Rs 4.50 per square meter is Rs 416. find the dimensions of the cuboidal box.

539) A hemispherical dome, open at base is made from sheet of fiber. If the diameter of hemispherical dome is 80 cm and $\frac{13}{170}$ of sheet actually used was wasted in making the dome, then find the cost of dome at the rate of 35/100 cm^2

540) A cylindrical bowl of internal diameter 18 cm and height 15 cm is full of liquid. The whole of the liquid is to be filled is small cylindrical bottles of diameter 3 cm and height 4 cm, Each bottle is sold for Rs 5, then find the amount earned.

541) Curved surface of cylindrical reservior 12 m deep is plastered from inside with concrete mixture at rate of Rs 15 per m^2. If the total payment made is of Rs 5652, then find the capacity of this reservoir in litre.

542) A cone, hemisphereand a cylinder stand on the same base and have equal height. Find the ratio of their:
(a) Volumes
(b) Curved Surface Areas.

543) A pen stand is cylindrical in shape with the base radius 3.5 cm and height 10.55 cm. How much card board will be required to make 25 such pen stand? Also, find volume of 1 pen stand.

544) A right angled Δ ABC 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.

545) The height, curved surface area and volume of a cone are h, c and V respectively. Prove that $3\pi Vh^3-c^2h^2+9V^2=0$

546) A hemispherical bowl of internal diameter 36 cm contains a liquid. This liquid is to be filled in cylindrical bottles of radius 3 cm and height 6 cm. How many bottles are required to empty the bowl? $\left[use \quad \pi = \frac{22}{7}\right]$

547) On a construction site, a deep pit is barricaded from the remaining portion by using 100 hollow cones made of recycled plastic. Each one has a base diameter 20 cm and height half a meter.
(a) What is the cost of painting all the cones, if the outer side of each of cone is to be painted red and cost of painting is Rs 30 per m^2.[π = 3.14, $\sqrt{26} = 5.1$]
(b) Which values is depicted by using recyclic plastic?

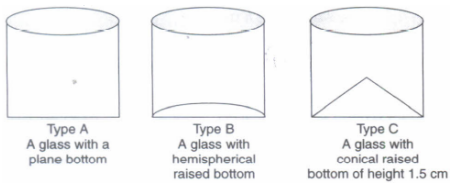
548) Student A stated the formula for the volume of cone as "V=$\frac{1}{3}(\pi l^2 h) - \frac{1}{3}\pi h^{3''}$ and the student B as "V = $\frac{1}{3}\pi r^2 h$ "
(a) Are the formulae stated by A and B true? If yes, why?
(b) By stating formula different than as usual which of the following values is deicted.
(i) Truth value
(ii) Social value
(iii) Respect for other views
(iv) Equality

549) A farmer wants to dig a well either in the form of cuboidal shape of 1.5 m $\times$ 1.5 m $\times$ 7 m or in the cylindrical shape of radius 75 cm and height 7 m. the rate of digging a well in Rs 75/m^3. the farmer decided to dig cylindrical form of well.
(a) Calculate the cost to dig the well in both cases. $\left(use\ \pi = \frac{22}{7}\right)$
(b) by the decision what value is depicted by the farmer?

550) 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 sdjoining the room to collect the rain water of roof for harvesting.
(i) If the tank is just filled with rain water, find the rainfall in cm.
(ii) What values are depicted in Arihant's plan?

551) The teacher asked students to prepare project related to Diwali. Lipsa prepared 12 Cylindrical candles each having radius of base 2 cm and height 7 cm. Himanshu prepared 14 fire crackers each of spherical shape of radius 1.50 cm.
(i) find the volume of candles and fire crakers.
(ii) According to you which has better project work and why?
(iii) Which message has been conveyed in above information?

552) Naresh, a juice seller has set up his juice shop. He has three types of glasses (see figure) of inner diameter 5 cm to sever the customers. the height of the glasses is 10 cm.



He decided to serve the customers in 'A' type of glasses. (Take π =3.14)

(i) Find the volume of each type of glass.

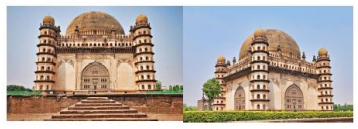
(ii) Which glass has the minimum capacity?

(iii) Which mathematical concept is used in above problem?

(iv) Bychoosing a glass of type A, Which value is depicted by juice seller Naresh?

Case Study Questions 9 x 4 = 36

553) Mathematics teacher of a school took her 9th standard students to show Gol Gumbaz. It was a part of their Educational trip. The teacher had interest in history as well. She narrated the facts of Gol Gumbaz to students. Gol Gumbaz is the tomb of king Muhammad Adil Shah, Adil Shah Dynasty. Construction of the tomb, located in Vijayapura , Karnataka, India, was started in 1626 and completed in 1656. It reaches up to 51 meters in height while the giant dome has an external diameter of 44 meters, making it one of the largest domes ever built. At each of the four corners of the cube is a dome shaped octagonal tower seven stories high with a staircase inside.



(a) What is the total surface area of a cuboid?

(i) lb + bh + hl **(ii) 2(lb + bh + hl)**

(iii) 2(lb + bh) **(iv) I^2+ b^2+ h^2**

(b) What is the curved surface area of hemispherical dome ?

(i) 908π m^2 **(ii) 968π m^2**

(iii) 340π m^2 **iv) 780π m^2**

(c) What is the height of the cubodial part ?

(i) 14 m **(ii) 7 m**

(iii) 29 m **(iv) 18 m**

d) What is the circumference of the base of the dome ?

(i) 34π **(ii) 22π**

(iii) 44π **(iv) 55π**

(v) The total surface area of a hemispherical dome having radius 7 cm is:

(a) 462 cm^2 **(b) 294 cm^2**

(c) 588 cm^2 **(d) 154 cm^2**

554) Mathematics teacher of a school took his 10th standard students to show Taj Mahal. It was a part of their Educational trip. The teacher had interest in history as well. He narrated the facts of Taj Mahal to the students. Then the teacher said in this monument one can find combination of solid figures. There are 4 pillars which are cylindrical in shape. Also, 2 domes at the back side which are hemispherical. 1 big domes at the centre. It is the finest example of the symmetry. (Use π = 22/7)

(i)How much cloth material will be required to cover 2 small domes each of radius 4.2 metres?

(a) 52.08 cm^2 **(b) 52.8 m^2** **(c) 52 m^2** **(d) none of these**

(ii) Write the formula to find the volume of one pillar (including hemispherical dome) :

(a) $\pi r^2(l + r)$ **(b) $\pi r^2(2/3\ r + h)$** **(c) $2\pi r^2 h$** **(d) none of these**

(iii) The volume of the hemispherical dome at the centre if base radius is 7 m is :

(a) 718.66 cm^3 **(b) 152.8 m^3** **(c) 718.66 m^3** **(d) 56 m^3**

(iv) What is the lateral surface area of all 4 pillars if height of the each pillar is 14 m and base radius is 1.4 m (without dome)?

(a) 508 m^2 **(b) 591.36 m^2** **(c) 52 m^2** **(d) none of these**

(v) The cost of polishing all the four pillars if the cost of 1 m^2 is Rs. 270, will be :

(a) Rs. 1,59,667.20 **(b) Rs. 2,00,000**

(c) Rs. 1,52,567.50 **(d) none of these**

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556) Mathematics teacher of a school took her 9th standard students to show Red fort. It was a part of their Educational trip. The teacher had interest in history as well. She narrated the facts of Red fort to students. Then the teacher said in this monument one can find combination of solid figures. There are 2 pillars which are cylindrical in shape. Also 2 domes at the corners which are hemispherical.7 smaller domes at the centre. Flag hoisting ceremony on Independence Day takes place near these domes.

(i) How much cloth material will be required to cover 2 big domes each of radius 2.5 metres?

(a) 75 m^2 (b) 78.57 m^2 (c) 87.47 m^2 (d) 25.8 m^2

(ii) Write the formula to find the volume of a cylindrical pillar:

(a) $\pi r^2 h$ (b) πrl (c) $\pi r(l + r)$ (d) $2\pi r$

(iii) Find the lateral surface area of two pillars if height of the pillar is 7 m and radius of the base is 1.4 m.

(a) 112.3 cm^2 (b) 12.2 m^2 (c) 90m^2 (d) 345.2cm^2

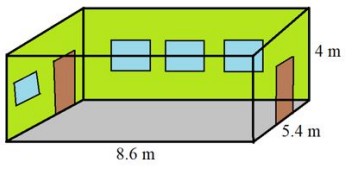
(iv) How much is the volume of a hemisphere if the radius of the base is 3.5 m?

(a) 85.9 m^3 (b) 80 m^3 (c) 98 m^3 (d) 89.83 m^3

(v) What is the ratio of sum of volumes of two hemispheres of radius 1 cm each to the volume of a sphere of radius 2 cm?

(a) 1:1 (b) 1:8 (c) 8:1 (d) 1:16

557) An architect's planned design for a room with dimensions of 8.6 m, 5.4 m and 4 m respectively. He also planned to make 4 windows with blue colour and 2 doors with brown wood colour. The room needs to be painted with Asian paint of Green colour except for the floor and square tiles were used for flooring as shown in the below figure:



(i) The total area of the four walls is :

(a) 112 sq m (b) 212 sq m

(c) 312 sq m (d) 412 sq m

(ii) If the area of windows and doors is 22 sq m. The area of the walls to be painted

(a) 100 sq m (a) 100 sq m (a) 100 sq m (d) 132 sq m

(iii) What is the area of the tiles to be used for flooring?

(a) 64.6 sq m (b) 46.44 sq m

(c) 66.4 sq m (d) 44.6 sq m

(iv) The total area of the room is (including windows and doors):

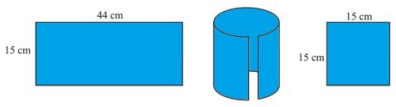
(a) 48.02 sq m (b) 840.4 sq m (c) 402.8 sq m (c) 402.8 sq m

(v) What is the volume of the air in the room?

(a) 157.68 cu. m (a) 157.68 cu. m

(a) 157.68 cu. m (d) 185.76 cu. m

558) Mohan lives in Hyderabad in Telangana. Those were very hot days of May. He thought that if we human beings need so much of water to drink, won't the birds also be thirsty. He decided to prepare a vessel to provide water for birds. He found a flexible blue coloured plastic rectangular sheet 44 cm × 15 cm. He rolled it along its length and joined the two opposite ends using a tape. He wanted to have a circular base for this cylinder and searched for another sheet. He found a square sheet 15 cm × 15 cm. He got a circular sheet just equal to the base of the cylinder cut from it. 15 cm 44 cm 15 cm 15 cm



(a) The curved surface area of the cylinder formed is

(i) 540 cm² (ii) 560 cm² (iii) 640 cm² (iv) 660 cm²

(b) The radius of the base of the cylinder is

(i) 2 cm (ii) 3.5 cm (iii) 7 cm (iv) 10 cm

(c) The area of the circular base required for the cylinder is

(i) 154 cm² (ii) 216 cm² (iii) 260 cm² (iv) 308 cm²

(d) How much will be the area of square sheet left unused after removing the circular base of the cylinder from it?

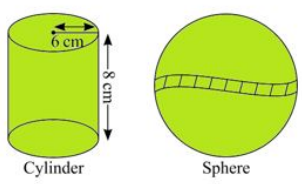
(i) 69 cm² (ii) 71 cm² (iii) 83 cm² (iv) 91 cm²

(e) Find the volume of water that can be filled in the cylinder.

(i) 1410 ml (ii) 1730 ml (iii) 2170 ml (iv) 2310 ml

559) Mr. Kumar, a Mathematics teacher brings some green coloured clay in the classroom to teach the topic 'mensuration'. First, he forms a cylinder of radius 6 cm and height 8 cm with the clay. Then, he moulds that cylinder into a sphere similarly, he moulds the sphere in other different shapes. Answer the following questions:

(i) Which of the following is not a 3D shape?



(a) cone (b) cuboid (c) rectangle (d) sphere

(ii) What is the volume of cylindrical shape?

(a) 268π cm³ (b) 288π cm³ (c) 36π cm² (d) 48π cm³

(iii) What is the formula of volume of sphere?

(a) $\frac{2}{3}$ **πr³ (b) πr³ (c)** $\frac{1}{3}$ **πr³ (d)** $\frac{4}{3}$ **πr³**

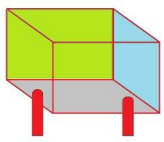
(iv) When clay changes into on shape to other which of the following remains same.

(a) Volume (b) Area (c) CSA (c) Radius

(v) The radius of the sphere formed is :

(a) 4 cm (b) 5 cm (c) 6 cm (c) 3 cm

560) In a newly constructed park which is situated in the heart of a city Hyderbad, an architect has form a structure in the given shape. The shape has a cuboid, which is standing on the two cylindrical beams. The dimensions of the cuboid are 1.5 m, 3 m and 0.5 m. The dimensions of the cylinders are of height 2 m and diameter 0.6 m.



(i) As the structure is made from the concrete, how much volume of concrete is reqired to make the cuboidal shape?

(a) 1.75 m^3 **(b) 2.20 m^3**

(c) 2.25 m^3 **(d) 1.25 m^3**

(ii) What is formula for calculating the lateral surface area of the cylinder?

(a) πr^2 **(b) $2\pi rh$**

(c) $\pi r^2 h$ **(d) $2\pi r^3$**

(iii) What is the volume of two cylinders?

(a) 1.20 m^3 **(b) 1.134 m^3**

(c) 3 m^3 **(d) 2.2 m^3**

(iv) If the cuboid needs to be painted red, how much area need to be painted?

(a) 5.2 m^2 **(b) 13 m^2**

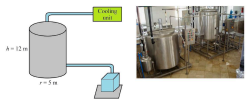
(c) 6.75 m^2 **(d) 5.7 m^2**

(v) If a cloth is needed to cover the cylindrical part, how much cloth is needed?

(a) 8.25m^2 **(b) 1.25 m^2**

(c) 4.50 m^2 **(d) 7.536 m^2**

561) One day teacaher planned to take all the Class X students to the milk factory (Chilling plant) and asked the students to observe it carefully. Refer to this plant, its machinery is shown below. It is related to some solid shapes, which we study in our curriculum.



(i) Refer to cylindrical container, calculate the quantity of milk it can store.

(a) 200 m^3 **(b) 300 m^3**

(c) 942.477 m^3 **(d) 1000 m^3**

(ii) What is the formula for calculating the total surface area of the cylindrical container i.e., milk container?

(a) $2\pi rh$ **(b) $2\pi r$ (r + h)**

(c) $2\pi r^2$ **(d)$2\pi rh$**

(iii) If the cube shown in the picture is of dimension 6 cm each. Find the capacity of this cubic container.

(a) 186 **(b) 200**

(c) 216 **(d) 185**

(iv) Find the ratio between the volume and C.S.A. of the cylindrical container.

(a) $\frac{2}{1}$ **(b)** $\frac{5}{2}$

(c) $\frac{4}{9}$ **(d)** $\frac{3}{7}$

(v) What is the formula for calculating the total surface area of the hemisphere?

(a) $2\pi r^2$ **(b) $4\pi r^2$**

(c) $3\pi r^2$ **(d)** $\frac{1}{2}$ **πr^2**

5 Marks 12 x 5 = 60

562) 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

563) A cone of height 24 cm has a curved surface area 550 cm^2. Find us volume.

564) Two solid spheres made of the same metal have masses 5920 g of and 740 g respectively. Determine the radius of the larger sphere, if the diameter of the smaller sphere is 5 cm.

565) Shanti Sweets stall placed an order to Mr. Kishorilal for making cardboard boxes for packing their sweets. Two sizes of boxes are ordered. The bigger of dimensions 25cm x 20cm x 5cm and the smaller of dimensions 15cm x 12cm x 5cm. For all the overlaps, 5% of the total surface is required extra. 250 boxes of each kind are required. Cost of the cardboard is 4 for 1000 cm^2, By mistake Shanti Sweets Stall made payment according to the bigger boxes, but Mr. Kishorilal returned back the excess money.

(a) What amount was returned back by Mr. Kishorilal to the Shanti Sweets Stall?

(b) Which mathematical concept is used in the above problem?

(c) By returning back the access money, which value is depicted by Mr. Kishorilal?

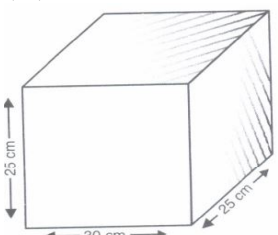
566) Rahul plans to erect an indoor greenhouse (herbarium} which is made entirely of glass panes (including base) held together with tape. It is 30 cm long, 25 cm wide and 25 cm high.

(a) What is the surface area of the glass used?

(b) How much of tape is needed or all the 12 edges?

(c) Which mathematical concept is used in the above problem?

(d) By erecting a greenhouse, which skill is depicted by Rahul?

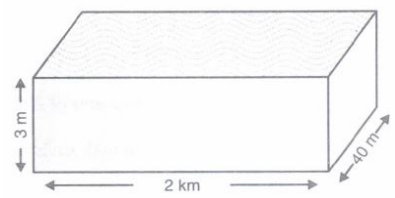


567) The Gram Panchayat of a village, plan to construct an underground cuboidal reservoir for water harvesting which is 2 km long. 40 m wide and 3 m deep.

(a) Find the volume of water which call be stored in the reservoir.

(b) Which mathematical concept is used in the above problem?

(c) Which skill is depicted by the Gram Panchayat by constructing a water reservoir?



568) 35 students of class IX of a Vidyalya 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 Vidyalya was to supply the competitors with cardboard.

(a) Which mathematical concept is used in the above problem?

(b) By making cylindrical penholders and decorating them, which skills are depicted by the students of class IX?

569) A welfare society plan to dig a rectangular tank for garbage-dumping purpose measuring 5m x 4.5 m x 2.1m . The mud taken out of the above tank is purchased by Ankur; who spreads it evenly over his plot measuring 15m x 9m.

Ankur paid for the mud at the rate of ₹ 400 per cubic metre.

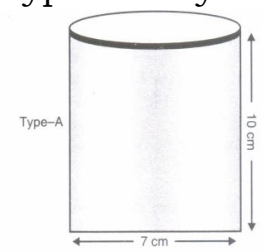
(a) Find the amount paid by Ankur to the welfare society.

(b) Which mathematical concept is used in the above problem?

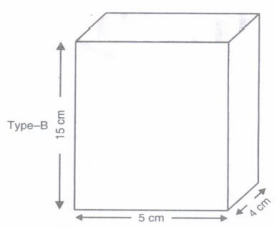
(c) By digging a tank for 'garbage-dumping'. what skill is depicted by the Welfare Society?

570) Rohit has set lip a juice-shop. He has two types of packs:

Type A: A cylindrical till cane with circular base ofdiameter 7 cm and height 10 cm.



Type B: A rectangular plastic cane with base-length 5 cm and width 4 cm and having height as 15 cm.



He decided to serve the customers in 'A 'type of packs.

(a) Find the volume of pack 'A '.

(b) Which pack has the greater capacity?

(c) Which mathematical concept is used in above problem?

(d) By choosing a pack of type-A and avoiding a plastic pack, which values are depicted by Rohit?

571) Students of class IX of the Sagar School plan to have their school bus stand barricaded from the remaining part of the road to avoid inconvenience of the people. For this purpose they use 50 hollow cones made of recycled cardboard. Each cone has a diameter of 40 cm and height 1 m.

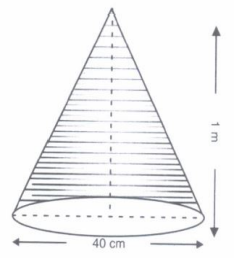
They painted outer side of each of the cones. The cost of painting is 12 per m^2.

[use $\pi = 3.14$ and $\sqrt{1.04} = 1.02$]

(a) Find the cost ofpainting ofall these cones.

(b) Which mathematical concept is used in the above problem?

(c) By barricading the school-bus stand using cones of recycled cardboard, which skills are depicted by the students of class IX of the Sagar School?



572) Nitin used to save a part of his pocket money. He wish to buy paint for a community-centrefrom his savings. He buys paint in a certain container which is sufficient to paint an area equal to 9.375 m^2.

(a) How many bricks of dimensions 22.5.cm x 10 cm x 7.5 cm can be painted out of this container?

(b) Which mathematical concept is used in the above problem?

(c) By using the pocket-money saving to buy paints for community-centre, which values are depicted by Nitin?

573) Rahul is having his birthday on coming Sunday. His father is planning to spend ₹ 3850.00 on his birthday. But Rahul has a different idea. He wish to serve soup to patients in a hospital. The cost of 1 litre of soup is ₹ 50, it is served in a cylindrical bowl of diameter 7 cm. If the bowl is filled with soup to a height of 4 cm, then:

(a) How many patients can be served with soup?

(b) Which mathematical concept is used in the above problem?

(c) By spending is birthday money for patients. which values are depicted by Rahul?