MATHS

BOOKS - MBD

Surface Areas and Volumes

Exercise

1. 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.

Watch Video Solution

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

Watch Video Solution

3. A cubical box has each edge 10 cm a cuboidal box is 10 cm wide, 12. 5 cm long 8 cm high. Which box has the greater lateral surface area and hy how much ?

Watch Video Solution

4. A cubical box has each edge 10 cm and a cuboidal box is 10 cm wide, 12. 5 cm long 8 cm high. Which box has the smaller total surface area and by how much ?

Watch Video Solution

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

Watch Video Solution

6. A small indoor greenhouse (herbarium is made entirely of glass panes (including base)

held together with tape. It is 30 cm long, 25 cm wide and 25 cm high. How much of tape is needed for all the 12 edges ?

Watch Video Solution

7. Shanti Sweets Stall was placing an order for making cardboard boxes for paking their sweets. Two sizes of boxes were required. The bigger of dimensions 25 cm by 20 cm by 5 cm and the smaller of dimensions 15 cm by 12 cm by 5 cm. 5% of the total surface area is

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

Watch Video Solution

8. 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 negligible, how much, tarpaulin would be required to make the shelter of height 2.5 m. with base dimensions 4 m x 3 m ?

Watch Video Solution

9. The measurements of the luggage box are 48 cm, 36 cm, and 28 cm. How many sq. cm of cloth is required to make a cover for the box ?

Watch Video Solution

10. A class room is 7 m long, 6.5 m wide and 4 m high. It has one door 3 m x 1.5 m and three windows, each measuring 2 m x 1 m. The interiror walls are to be colour washed. The contractor charges Rs 5.25 per sq. m. Find the cost of colour washing.

Watch Video Solution

11. Two cubes each of side t cm are joined end to end. Find the surface area of the resulting

cuboid.

Watch Video Solution

12. What happens to the surface area of a cube if each of its each edge is doubled ?

Watch Video Solution

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

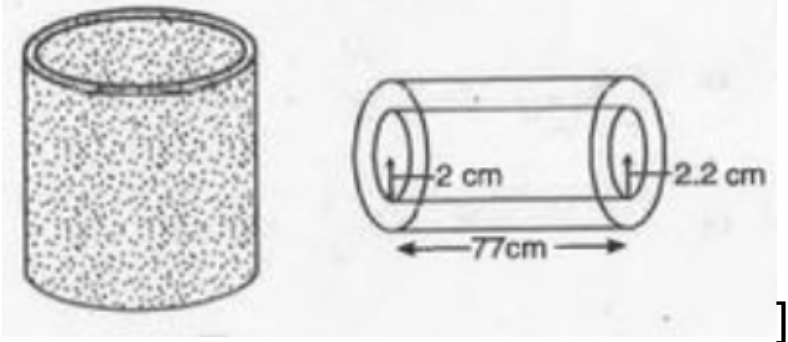
Watch Video Solution

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

Watch Video Solution

15. A metal pipe is 77 cm long. The inner diameter of a cross section is 4cm, the outer

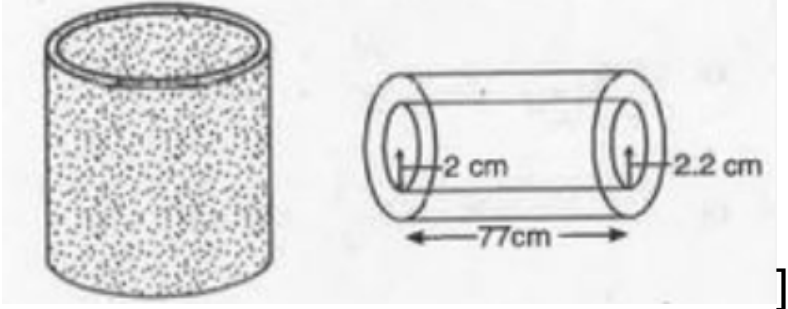
diameter being 4.4 cm [See Fig.



]. Find its inner curved surface area.

Watch Video Solution

16. A metal pipe is 77 cm long. The inner diameter of a cross section is 4cm, the outer diameter being 4.4 cm [See Fig.



]. Find its outer curved surface area.

Watch Video Solution

17. 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.

Watch Video Solution

18. A cylinderical pillar is 50 cm in diameter and 3.5 m in height. Find the cost of white washing the curved surface of the pillar at the rate of Rs 12.50 perm^2.

Watch Video Solution

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

Watch Video Solution

20. The inner diameter of a circular well is 3.5 m. It is 10 m deep. Find its inner curved surface area.

Watch Video Solution

21. The inner diameter of a circular well is 3.5 m. It is 10 m deep. Find the cost of plastering

this curved surface at the rate of Rs 40 per m^2

.

Watch Video Solution

22. In a hot water heating system, there is a cylindrical piping of length 28 m and diameter 5 cm. Find the total radiating surface in the system.

Watch Video Solution

23. Find the lateral or curved surface area of a petrol storage tank that is 4.2 in diameter and 4.5 m high.

Watch Video Solution

24. In Fig., 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. Assume $\pi = \frac{22}{7}$

Watch Video Solution

25. 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 cardborad. If there were 35

competitors, how much cardboard was required to be bought for the competiton ?

Watch Video Solution

26. Find the lateral surface area of a right circular cylinder, if its base has radius 3 cm and its height is 5 cm.

Watch Video Solution

27. A circular cylinder has radius 3 mm and height 80 cm. Find the lateral surface area of the cylinder.

Watch Video Solution

28. It is required to make from a sheet of metal a closed cylindrical tank whose height is 1 m and whose base radius is 70 cm. How many square metres of sheet metal is required ?

Watch Video Solution

29. The radius of the base of a closed right circular cylinder is 21 cm and its height is 100 cm. Find the total surface area of the cylinder.

30. The diameter of a 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 meter.

Watch Video Solution

31. The outer diameter of a drainage pipe is 1 m and it is 21 m long. Find the cost of painting the outer surface of the pipe at the rate of Rs 5 per m^2.

Watch Video Solution

32. A cylindrical pillar is 50 cm in diameter and 3.5 m high. Find the cost of white washing its

curved surface at the rate of Rs 40 per m^2.

Watch Video Solution

33. A cylindrical vessel open at the top has a dimeter 20 cm and height 14 cm. Find the cost of tin-plating it on the inside at the rate of 70 paise per $100cm^2$.

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

36. Curved surface area of a cone is $308cm^2$, and its slant height is 14 cm. Find radius of the base .

Watch Video Solution

37. Curved surface area of a cone is $308cm^2$, and its slant height is 14 cm. Find total surface area of the cone.

Watch Video Solution

38. A conical tent is 10 m high and the radius of its base is 24 m. Find slant height of the tent.

Watch Video Solution

39. A conical tent is 10 m high and the radius of its base is 24 m. Find cost of the canvas required to make the tent, if the cost of $1m^2$ canvas is Rs 70.

Watch Video Solution

40. What length of tarpaulin 3 m wide will be required to make conical tent of height 8 m and base radius 6m? Assume that the extra length of material that will be required for stitching margins and wastage in cutting is approximately 20 cm (use $\pi = 3.14$).

Watch Video Solution

41. The slant height and base diameter of a conical tomb are 25 m and 14 m, respectively.

Find the cost of whitewashing its curved surface at the rate of Rs 210 per $100m^2$.

Watch Video Solution

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

Watch Video Solution

43. 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 Rs 12 per m^2, what will be the cost of painting all these cones (use $\pi = 3.14$, and take $\sqrt{1.04} = 1.02$) ?

Watch Video Solution

44. For a right circular cone, slant height = 10 cm, radius of base = 5 cm. Find the area of its lateral surface.

Watch Video Solution

45. The radius of the base of a right circular cone is 12 m. If the slant height of the cone is 15 m, find the height of the cone.

Watch Video Solution

46. The height of a cone is 16 m and the radius of its base is 12 m. What is the area of its curved surface ?

Watch Video Solution

47. Find the total surface area of a cone, if its slant height is 9 m and the diameter of its base is 12 m.

Watch Video Solution

48. 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)

Watch Video Solution

49. A corn cob (see Fig. 13.17), shaped somewhat like a cone, has the radius of its broadest end as 2.1 cm and length (height) as 20 cm. If each 1 cm2 of the surface of the cob carries an average of four grains, find how

many grains you would find on the entire cob.

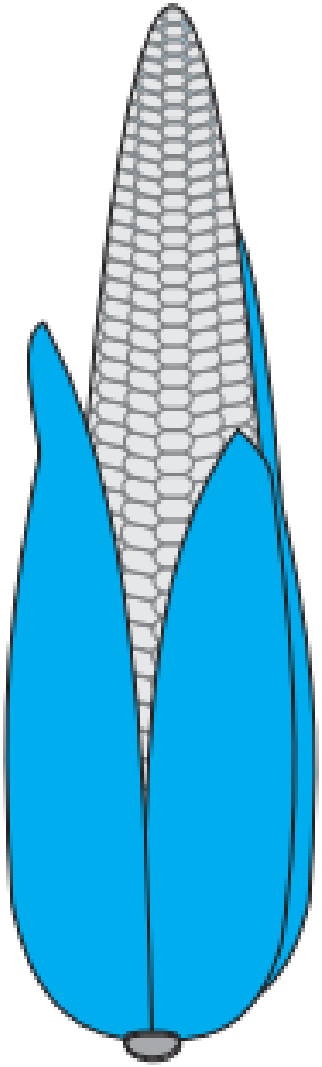


Fig. 13.17

Watch Video Solution

50. A conical tent is 10 m high and the radius of its base is 24 m. What is its slant height ? Find the cost of the canvas used, if one m^2 of canvas costs Rs 14.

Watch Video Solution

51. The radius of a spherical balloon increases from 7 cm to 14 cm as air is being pumbed

into it. Find the ratio of surface areas of the balloon in the two cases.

Watch Video Solution

52. A hemispherical bowl made of brass has inner diameter 105 cm. Find the cost of tin-plating it on the inside at the rate of Rs 16 per $100cm^2$.

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

55. 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.

Watch Video Solution

56. A right circular cylinder just encloses a sphere of radius r (see Fig.). Find surface area of the sphere.

Watch Video Solution

57. A right circular cylinder just encloses a sphere of radius r (see Fig.). Find curved surface area of the cylinder.

Watch Video Solution

58. A right circular cylinder just encloses a sphere of radius r (see Fig.). Find ratio of the areas obtained in surface area of the sphere and curved surface area of the cylinder.

Watch Video Solution

59. Find the suface area of a sphere whose radius is 10 cm : (Take $\pi = 3.14$).

Watch Video Solution

60. Find the suface area of a sphere whose radius is 5 cm : (Take $\pi = 3.14$).

Watch Video Solution

61. Find the surface area of sphere whose radius is 3 cm.

Watch Video Solution

62. Find the surface area of a sphere whose diameter is 21 dm.

Watch Video Solution

63. The radius of a spherical balloon increases from 6 cm to 12 cm. Compare the surface areas of the balloon in the two cases.

Watch Video Solution

64. The dome of a building is in the form of a hemisphere. Its radius is 63 dm. Find the cost of tin-plating it on the inside at the rate of Rs. 2 per $100cm^2$.

Watch Video Solution

65. Assuming the earth to be a sphere of radius 6370 km, how many square kilometers is area of the land, if three-fourth of the earth's surface is convered by water.

Watch Video Solution

66. A wooden toy is in the form of a cone surmounted by a hemisphere. The diameter of the base of the cone is 6 cm. and its height is

4 cm. Find the cost of painting the toy at the rate of Rs. 50 per $1000cm^2$.

Watch Video Solution

67. A matchbox 4 cm x 2.5 cm x 1.5 cm. What will be the volume a packet containing 12 such boxes ?

Watch Video Solution

68. 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).

Watch Video Solution

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

Watch Video Solution

70. 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.

Watch Video Solution

71. 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. $(1000l = 1m^3)$

Watch Video Solution

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

 Watch Video Solution

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

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

Watch Video Solution

74. Find the minimum number of bricks each measuring $22.5cm \times 11.5cm \times 7.5cm$ required to construct a wall 10 m long, 6 m high and 1.5 m thick.

Watch Video Solution

75. 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.

Watch Video Solution

76. 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?

Watch Video Solution

77. Find the length of a wooden plank of width 2.5 m, thickness 0.025m and volume 0.25 m^3.

Watch Video Solution

78. The rainfall on a certain day was 6 cm. How many litres of water fell on 3 hectares of field on that day ?

Watch Video Solution

79. A solid rectangular piece of iron measures 2.5 m by 1.2 m by 1 cm. Find the weight of this piece, if 1 cubic cm of iron weighs 8 grams.

Watch Video Solution

80. The dimensions of a metal block are 4.5 m by 1.5 m by 27 m. It is melted and recast into cubes, each of edge 45 cm. How many cubes can be formed ?

Watch Video Solution

81. The length, breadth and thickness of a metallic cuboid are 28 cm, 14 cm and 7 cm respectively. It is melted and made into a cube. What is the edge of the cube can be formed ?

Watch Video Solution

82. 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 ? $\left(1000cm^3 = 1l\right)$

Watch Video Solution

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

Watch Video Solution

84. A soft drink is avaliable in two packs a tin can with a rectangular base of length 5 cm

and width 4 cm, having height of 15 cm . Find container's capacityand how much ?

Watch Video Solution

85. A soft drink is avaliable in two packs a plastic cylinder with circular base of diameter 7 cm and height 10 cm. Find the container's capacity and how much ?

Watch Video Solution

86. If the lateral surface of a cylinder is 94.2 cm^2 and its height is 5 cm, then find radius of its base. (Use π = 3.14)

Watch Video Solution

87. If the lateral surface of a cylinder is 94.2 cm^2 and its height is 5 cm, then find volume of the cylinder. (Use π = 3.14)

Watch Video Solution

88. 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 inner curved surface area of the vessel.

Watch Video Solution

89. 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 radius of the base.

Watch Video Solution

90. 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 capacity of the vessel.

Watch Video Solution

91. The capacity of a closed cylindrical vessel of height 1m is 15.4 litres. How many square

metres of metal sheet would be needed to make it ? ($1000l = 1m^3$)

Watch Video Solution

92. A bag of grain contains $2.8m^3$ of grain. How many bags are needed to fill a drum of radius 4.2 m and height 5m?

Watch Video Solution

93. 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 diameter of graphite is 1 mm. If the length of the pencil is 14 cm, find the volumes of the wood and that of the graphite.

Watch Video Solution

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

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

Watch Video Solution

95. Find the volume of a right circular cylinder, if the radius (r) of its base and its altitude (h) are : $r = 3.5cm, h = 40cm.$

Watch Video Solution

96. Find the volume of a right circular cylinder, if the radius (r) of its base and its altitude (h) are : $r = 5m, h = 15m.$

Watch Video Solution

97. Find the volume of u cylindei, if the diameter (d) of its base and its altitude (h) are : $d = 21cm, h = 30cm.$

Watch Video Solution

98. Find the volume of u cylindei, if the diameter (d) of its base and its altitude (h) are : $d = 7cm, h = 12cm.$

Watch Video Solution

99. 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 of radius 3 cm up to a height of 8 cm, and sold for ₹ 3 each. How

much money does the stall keeper receive by selling the juice completely?

Watch Video Solution

100. A water tank is cylindrical in shape. The diameter of its base on the inside is 28 m and its depth is 7 m. How many kilolitres of water can it hold ?

Watch Video Solution

101. The circumference of the base of a cylinder is 66 cm and its height is 35 cm. Find the volume of the cylinder.

Watch Video Solution

102. A cylindrical tank has a capacity of 6160 m^3. Find its depth, if the diameter of its base is 28 m.

Watch Video Solution

103. The thickness of a hollow wooden cylinder is 2 cm. It is 35 cm long and its inner rdius is 12 cm. Find the volume of wood required to make the cylinder, assuming it is open at either end.

Watch Video Solution

104. A rectangular piece of paper $11cm \times 4cm$ is folded without overlapping to make a cylinder of height 4 cm. Find the volume of the cylinder.

Watch Video Solution

105. A cylindrical bucket, 14 cm in radius, is filled with water to some height. If a rectangular solid of size $28cm \times 11cm \times 10cm$ is immersed in the water, find the height by which water rises in the bucket.

Watch Video Solution

106. A piece of metal pipe is 77 cm long, the inside diameter of a cross-section is 4 cm and the outside diameter is 4.5 cm. If the metal weighs 8 g per cm^3, what is the weight of piece of pipe ?

Watch Video Solution

107. The thicknes of a metallic tube is 1 cm and the inner diameter of the tube is 12 cm. Find

the mass of 1 m long tube, if the density of the metal be $7.8g/cm^3$.

Watch Video Solution

108. The rain which fall on a roof 18 m long and 16.5 m wide is allowed to be stored into a cylindrical tank 8 cm diameter. If it rains 10 cm on a day, what is the rise of water level in the tank due to it ?

Watch Video Solution

109. A piece of ductile metal is in the formof a cylinder of diameter 1 cm and length 5 cm. It is drawn out into a wire of diameter 1 mm. What will be the length of the wire so obtained ?

Watch Video Solution

110. A baby powder tin has square base with side 9 cm and height 12 cm. Another has circular base with radius 3.5 cm and height 10 cm. Which of the two contains more powder and by how much ?

Watch Video Solution

111. Find the volume of the right circular cone with radius 6 cm, height 7 cm .

Watch Video Solution

112. Find the volume of the right circular cone with radius 3.5 cm, height 12 cm .

Watch Video Solution

113. Find the capacity of a conical vessel with radius 7 cm, slant height 25 cm.

Watch Video Solution

114. Find the capacity of a conical vessel with height 12 cm, slant height 13 cm.

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

117. 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.

Watch Video Solution

118. Find the volume of a right circular cone 102 cm high if the radius of its base is 28 cm.

Watch Video Solution

119. The height of a cone is 15 cm and the area of the base is $314cm^2$. Find the volume.

Watch Video Solution

120. Find the volume of the right circular cone with radius 3.5 cm, height 12 cm .

Watch Video Solution

121. The diameter of a right circular cone is 4 cm and its volume is $48\pi cm^3$. What is its height ?

Watch Video Solution

122. A conical paper cup is in the form of a right circular cone with height 5 cm and diameter of the base 4 cm. How much water can it hold ?

Watch Video Solution

123. The circumference of the base of a 9 m high conical tent is 44 m. Find the volume of the air in it.

Watch Video Solution

124. A conical vessel whose internal radius is 5 cm and height of 24 cm is full of water. The water is emptied into a cylindrical vessel with internal radius 10 cm. Find the height to which the liquid rises.

Watch Video Solution

125. The radius and the height of a right circular cone are in the ratio 5 : 12. If its volume is $314cm^3$, find the slant height and the radius of the cone. [Use π = 3.14]

Watch Video Solution

126. The volume of a conical tent is $1232m^3$ and the area of its base is $154m^2$, Find the

length of the canvas required to build the tent, if the canvas is 2 m in width.

Watch Video Solution

127. Find the volume of a sphere whose radius is 7 cm.

Watch Video Solution

128. Find the volume of a sphere whose radius is 0.63 cm.

Watch Video Solution

129. Find the amount of water displaced by a solid spherical ball of diameter 28 m.

Watch Video Solution

130. Find the amount of water displaced by a solid spherical ball of diameter 0.21 m.

Watch Video Solution

131. The diameter of a metallic ball is 42 cm. What is the mass of the ball, if the metal weighs 8.9 g per cm^3 ?

Watch Video Solution

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

Watch Video Solution

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

Watch Video Solution

134. 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.

Watch Video Solution

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

Watch Video Solution

136. A dome of a building is in the form of a hemisphere. From inside, it was white washed at the cost of Rs 498.96. If the cost of white-washing is at the rate of Rs 2.00 per square metre, find the inner surface area of the dome.

Watch Video Solution

137. A dome of a building is in the form of a hemisphere. From inside, it was white washed at the cost of Rs 498.96. If the cost of white-washing is at the rate of Rs 2.00 per square metre, find the volume of the air inside the dome.

Watch Video Solution

138. Twenty seven solid iron spheres, each of radius r and surface area S are melted to form a sphere with surface area S'. Find the radius r' area of the new sphere.

Watch Video Solution

139. Twenty seven solid iron spheres, each of radius r and surface area S are melted to form a sphere with surface area S'. Find the ratio of S and S'.

Watch Video Solution

140. 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 ?

Watch Video Solution

141. Find the volume of a sphere of radius 4 cm.

Watch Video Solution

142. Find the volume of a sphere whose radius is : 3.5 cm.

Watch Video Solution

143. Find the volume of a sphere whose radius is : 14 dm.

Watch Video Solution

144. A hemispherical bowl has inner diameter 11.2 cm. Find the volume of the milk it can hold.

145. If S denotes the surface area and V the volume of the sphere, then show that $S^3 = 36\pi V^2$

146. The surface area of a sphere is $1386cm^2$. Find its volume.

Watch Video Solution

147. The diameter of a copper sphere is 6 cm. It is beaten and drawn into a wire of diameter 0.2 cm. Find the length of wire.

Watch Video Solution

148. A hemispherical bowl is made of steel 0.25 cm thick. The inner radius of the bowl is 5 cm. Find the volume of steel used in making the bowl. [Take π = 3.14]

Watch Video Solution

149. Find the volume and total surface area of a soild in the form of a right circular cylinder with hemispherical ends whose extreme

height is 19 cm and the radius of the cylinder is 3.5 cm

Watch Video Solution

150. A sphere of diameter 6 cm is dropped into a cylindrical vessel partly filled with water. The diameter of the vessel is 12 cm. If the sphere is completely submerged, by how much will the surface of water rise ?

Watch Video Solution

151. A spherical balloon grows to twice its radius when inflated. How has its volume increased ?

Watch Video Solution

152. The diamater of a shot-put made of brass is 14 cm. If 1 cm^3 of brass has mass 9 g, find the mass of the shot-put.

Watch Video Solution

153. How many lead shots each 0.3 cm in diameter be can made from a cuboid of dimension $9cm \times 11cm \times 12cm$?

Watch Video Solution

154. A copper wire 36m long with diameter 2 mm is melted to form a sphere. Find volume of the copper wire.

Watch Video Solution

155. A copper wire 36m long with diameter 2 mm is melted to form a sphere. Find volume of the copper wire.

Watch Video Solution

156. A copper wire 36m long with diameter 2 mm is melted to form a sphere. Find the radius of the sphere.

Watch Video Solution

157. A hemispherical bowl of steel is of thickness 0.3 cm (See Fig) If the inner radius of the bowl is 7 cm, find the volume of the steel used in making the bowl.

Watch Video Solution

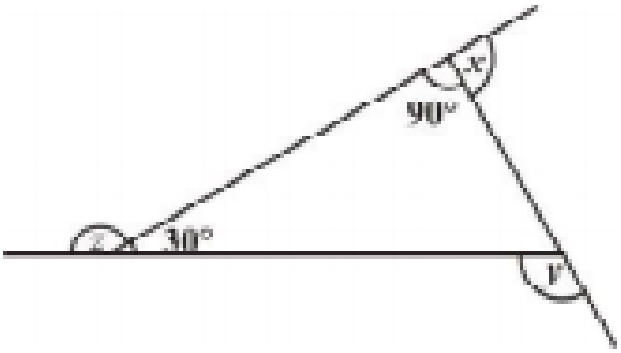
158. Match the following :

(*i*) sin (90°–A)	(*a*) Sin A
(*ii*) Cos 0°	(*b*) 0
(*iii*) Sin 0°	(*c*) 1
(*iv*) Cas (90°–A)	(*d*) Cos A

.

Watch Video Solution

159. Find x+y+z



Watch Video Solution

160. If diameter of a sphere is decreased by 25% then what percent does its curved surface

area decrease ?

Watch Video Solution

161. Sameera wants to celebrate the fifth birthday of her daughter with a party. She bought thick paper to make the conical party caps. Each cap is to have a base diameter of 10 cm and height 12 cm. A sheet of the paper is 25 cm by 40 cm, and approximately 82% of the sheet can be effectively used for making the caps after cutting. What is the minimum

number of sheets of paper that Sameera would need to buy, if there are to be 15 children at the party ?

Watch Video Solution

162. The surface area of a cuboid is

A. 2 (lb + bh + hi)

B. 3 (lb + bh + hi)

C. 2 (lb-bh-hl)

D. 3 (lb - bh - hi).

Answer:

Watch Video Solution

163. The surface area of a cube if its edge is a is?

A. $7a3$

B. $6a3$

C. $5a3$

D. $5a2$

Answer:

Watch Video Solution

164. The length, breadth and height of a room is 5m, 4m and 3m. The cost of white washing its four walls at the rate of Rs 7.50 per m^2 is :

A. Rs 110

B. Rs 109

C. Rs 220

D. Rs 105

Answer:

Watch Video Solution

165. 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.

A. 5m

B. 4m

C. 6m

D. 8m

Answer:

Watch Video Solution

166. The breadth of a room is twice its height and is half of its length. The volume of room is $512dm^3$. Its dimensions are :

A. 16 dm,8 dm, 4 dm

B. 12 dm, 8 dm, 2 dm

C. 8 dm, 4 dm, 2 dm

D. 10 dm, 15 dm, 20 dm

Answer:

Watch Video Solution

167. The area of three adjacent faces of a cube is x, y and z. Its volume V is :

A. V = xyz

B. $V^3 = xyz$

C. $V^2 = xyz$

D. None.

Answer:

Watch Video Solution

168. Two cubes each of edge 12 cm are joined.

The surface area of new cuboid is :

A. $140cm^2$

B. $1440cm^2$

C. $144cm^2$

D. $72cm^2$

Answer:

Watch Video Solution

169. The curved surface area of a cylinder of height h and base radius r :

A. $2\pi rh$

B. πrh

C. $\frac{1}{2}\pi rh$

D. None.

Answer:

Watch Video Solution

170. The total surface area of a cylinder of base radius r and height h is :

A. $2\pi(r+h)$

B. $2\pi r(r+h)$

C. $3\pi r(r+h)$

D. $4\pi r(r+h)$

Answer:

Watch Video Solution

171. The curved surface area of a cylinder of height 14 cm Is 88 cm^2. The diameter of its circular base is

A. 4 cm

B. 3 cm

C. 2 cm

D. 5 cm

Answer:

Watch Video Solution

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

A. 6.45 m^2

B. 7.48 m^2

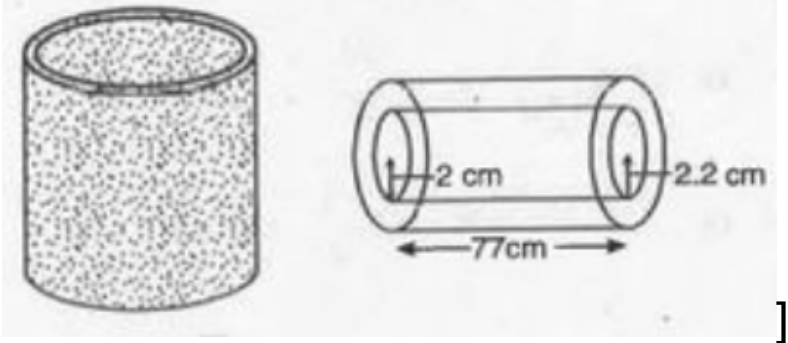
C. 6.48 m^2

D. 5.48 m^2

Answer:

Watch Video Solution

173. A metal pipe is 77 cm long. The inner diameter of a cross section is 4cm, the outer diameter being 4.4 cm [See Fig.



]. Find its inner curved surface area.

A. $864cm^2$

B. $968cm^2$

C. $768cm^2$

D. $864cm^2$

Answer:

Watch Video Solution

174. 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.

A. $1584m^2$

B. $1284m^2$

C. $1384m^2$

D. $1184m^2$

Answer:

Watch Video Solution

175. 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 ₹ 12.50 per m^2 .Assume $\pi = \frac{22}{7}$, unless stated otherwise.

A. Rs 68.75

B. Rs 5 8.75

C. Rs 48.75

D. Rs 38.75

Answer:

176. The inner diameter of a circular well is 3.5 m. It is 10 m deep. Find its inner curved surface area.

A. $120m^2$

B. $110m^2$

C. $130m^2$

D. $140m^2$

Answer:

Watch Video Solution

177. 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. Assume $\pi = \frac{22}{7}$, unless stated otherwise.

A. $6.6m^2$

B. $5.5m^2$

C. $4.4m^2$

D. $3.4m^2$

Answer:

Watch Video Solution

178. The curved surface area of a right circular cone of slant height 10 cm and base radius 7 cm is :

A. $120cm^2$

B. $220cm^2$

C. $240cm^2$

D. $140cm^2$

Answer:

Watch Video Solution

179. The height of a cone is 16 cm and base radius is 12 cm. Find the slant height?

A. 10 cm

B. 15 cm

C. 20 cm

D. 8 cm.

Answer:

Watch Video Solution

180. Curved surface area of a cone of base radius 12 cm and height 16 cm is :

A. $753.6cm^2$

B. $1205.76cm^2$

C. $863.8cm^2$

D. $907.6cm^2$.

Answer:

Watch Video Solution

181. The curved surface area of a cone of slant height 10 cm and base diameter 10.5 cm is :

A. $753.6cm^2$

B. $1205.76cm^2$

C. $863.8cm^2$

D. $907.6cm^2$

Answer:

Watch Video Solution

182. The slant height of a cone is 26 m and base diameter is 20 m. Its height is :

A. 24 m

B. 25 m

C. 23 m

D. 35 m

Answer:

Watch Video Solution

183. The curved surface area of a cone is $308cm^2$ and its slant height is 14 cm. The radius of its base is :

A. 8 m

B. 7 m

C. 9 m

D. 12 m

Answer:

Watch Video Solution

184. A conical tent is 10 m high and the radius of its base is 24 m. The slant height of tent is :

A. 26m

B. 28m

C. 25m

D. 27m

Answer:

Watch Video Solution

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

A. Rs 1233

B. Rs 1155

C. Rs 1388

D. Rs 1432

Answer:

 Watch Video Solution

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

A. $5500cm^2$

B. $6500cm^2$

C. $8500cm^2$

D. $3500cm^2$

Answer:

Watch Video Solution

187. The curved surface area of a hemisphere of radius r is :

A. $2\pi r^2$

B. $4\pi r^2$

C. $3\pi r^2$

D. $5\pi r^2$

Answer:

Watch Video Solution

188. Total surface area of a hemisphere of radius r is :

A. $4\pi r^2$

B. $3\pi r^2$

C. $2\pi r^2$

D. $5\pi r^2$

Answer:

Watch Video Solution

189. The curved surface area of a sphere of radius 7 cm is :

A. $516cm^2$

B. $616cm^2$

C. $716cm^2$

D. $880cm^2$

Answer:

Watch Video Solution

190. The curved surface area of a hemisphere of radius 21 cm is :

A. $2772cm^2$

B. $2564cm^2$

C. $3772cm^2$

D. $4772cm^2$

Answer:

Watch Video Solution

191. The curved surface area of a sphere of radius 14 cm is :

A. $2464cm^2$

B. $2428cm^2$

C. $2464cm^3$

D. $2428cm^3$

Answer:

Watch Video Solution

192. Curved surface area of sphere of diameter 14 cm is :

A. $616cm^2$

B. $676cm^2$

C. $616cm^3$

D. $676cm^3$

Answer:

Watch Video Solution

193. Total surface area of a hemisphere of radius 10 cm is :

A. $942cm^2$

B. $842cm^2$

C. $942cm^3$

D. $842cm^3$

Answer:

Watch Video Solution

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

A. 4 : 1

B. 1 : 4

C. 3 : 1

D. 1 : 2

Answer:

Watch Video Solution

Watch Video Solution

195. A matchbox 4 cm x 2.5 cm x 1.5 cm. What will be the volume a packet containing 12 such boxes ?

A. $160cm^3$

B. $180cm^3$

C. $160cm^2$

D. $180cm^2$

Answer:

Watch Video Solution

196. A cuboidal water tank is 6 m long 5 m wide and 4.5 m deep. How many litre of water can it hold ?

A. 1350 liters

B. 13500 liters

C. 135000 liters

D. 135 liters

Answer:

Watch Video Solution

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

A. 4.75 m

B. 7.85 m

C. 4.75 m

D. 4.85 m

Answer:

Watch Video Solution

198. The capacity of a cuboidal tank is 50000 litres. The length and depth are 2.5 m and 10 m respectively. Its breadth is :

A. 4 m

B. 3 m

C. 2 m

D. 5 m

Answer:

Watch Video Solution

199. A godown measures $40m \times 25m \times 15m$. The maximum number of the wooden crates each measuring $1.5m \times 1.25m \times 0.5m$ that can be stored in the godown are :

A. 18000

B. 16000

C. 15000

D. 14000

Answer:

Watch Video Solution

200. 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?

A. $4000m^3$

B. $40m^3$

C. $400m^3$

D. $40000m^3$

Answer:

Watch Video Solution

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

A. 33.75 liters

B. 34.65 liters

C. 35.75 liters

D. 38.75 liters

Answer:

Watch Video Solution

202. If the lateral surface of a cylinder is 94.2 cm and its height is 5 cm. Its base radius is :

A. 3 cm

B. 4 cm

C. 5 cm

D. 6 cm

Answer:

Watch Video Solution

203. Cost of painting inear surface of a 10 cm deep cylindrical vessel is Rs 2200. If the cost of painting is Rs $20/m^2$ then find the radius of its base.

A. 1.75 m

B. 1.85 m

C. 1.95 m

D. 1.65 m

Answer:

Watch Video Solution

204. The height and slant height of a cone are 21 cm and 28 cm. Its volume is :

A. $5546cm^2$

B. $7546cm^3$

C. $5564cm^3$

D. $8546cm^2$

Answer:

Watch Video Solution

205. The radius and height of a right circular cone are 6 cm and 7 cm respectively. Its volume is :

A. $254cm^3$

B. $264cm^3$

C. $274cm^3$

D. $284cm^3$

Answer:

Watch Video Solution

206. The radius and height of a conical vessel are 7 cm and 25 cm respectively. Its capacity in litres is :

A. 1.232 l

B. 1.5 l

C. 1.35 l

D. 1.6 l .

Answer:

 Watch Video Solution

207. The height of a cone is 15 cm. If its volume is $1570cm^3$ then its base radius is :

A. 12 cm

B. 10 cm

C. 15 cm

D. 18 m

Answer:

Watch Video Solution

208. The volume of a right circular cone of height 9 cm is $48\pi cm^3$. The diameter of its base is :

A. 10 cm

B. 12 cm

C. 8 cm

D. 6 cm

Answer:

Watch Video Solution

209. A conical pit of top diameter 3.5m is 12 m deep. Its capacity in kilo litres is :

A. 38.5 kl

B. 48.5 kl

C. 39.5 kl

D. 47.5 kl

Answer:

Watch Video Solution

210. The height of a cone is 15 cm. If its volume is $1570cm^3$ the diameter of its base is :

A. 5 cm

B. 8 cm

C. 20 cm

D. 12 cm

Answer:

Watch Video Solution

211. The diameter of moon is approx, one fourth of the diameter of the earth. What

fraction of volume of the earth is the volume of the moon ?

A. $\frac{1}{64}$

B. $\frac{1}{32}$

C. $\frac{1}{16}$

D. $\frac{1}{48}$

Answer:

Watch Video Solution

212. The dimensions of a cuboid are $50cm \times 40cm \times 10cm$. Its volume in litres is :

A. 10 liters

B. 12 liters

C. 20 liters

D. 25 liters

Answer:

Watch Video Solution

213. The volume of a cuboidal tank is $250m^3$. If its base area is `50 m^2 then depth of the tank is :

A. 5 m

B. 200 m

C. 300 m

D. 12500 m

Answer:

Watch Video Solution

214. The length, breadth and height of a cuboidal solid is 4 cm, 3 cm and 2 cm respectively. Its volume is :

A. $(4+3+2)cm^3$

B. $2(4+3+2)cm^3$

C. $4 \times 3 \times 2cm^3$

D. $2(4+3) \times 2cm^3$

Answer:

Watch Video Solution

215. The volume of a cuboidal solid of length 8 m and breadth 5 m is $200m^3$. Its height is :

A. 5 m

B. 15 m

C. 6 m

D. 18 m

Answer:

Watch Video Solution

216. The curved surface area of a sphere is $616cm^2$. Its radius is :

A. 6 cm

B. 8 cm

C. 7 cm

D. 5 cm

Answer:

Watch Video Solution

217. If radius of a sphere is $2\frac{d}{3}$ then its volume is :

A. $\frac{32}{81}\pi d^3$

B. $\frac{23}{4}\pi d^3$

C. $\frac{32}{3}\pi d^3$

D. $\frac{34}{3}\pi d^3$

Answer:

Watch Video Solution

218. The capacity of a cylindrical tank is $6160m^3$. Its base diameter is 28 m. The depth of this tank is :

A. 5 m

B. 8 m

C. 10 m

D. 15 m

Answer:

Watch Video Solution

219. The volume of a cylinder of radius r and length h is

A. $2\pi rh$

B. $\pi r^2 h$

C. $\frac{4}{3}\pi r^2 h$

D. $2\pi r^2 h$

Answer:

Watch Video Solution

220. Base radius of two cylinder are in the ratio 2 : 3 and their heights are in the ratio 5 : 3. The ratio of their volumes is :

A. 27:20

B. 25 : 24

C. 20 : 27

D. 15 : 20

Answer:

Watch Video Solution

221. If base radius and height of a cylinder are increased by 100% then its volume increased by :

A. 0.3

B. 0.4

C. 0.42

D. 0.331

Answer:

Watch Video Solution

222. The diameter of a sphere is 14 m. The volume of this sphere is :

A. $1437\frac{1}{3}m^3$

B. $1357\frac{1}{3}m^3$

C. $1437\frac{2}{3}m^3$

D. $1337\frac{2}{3}m^3$

Answer:

Watch Video Solution

223. The volume of a sphere is $524cm^3$. The diameter of sphere is :

A. 4 cm

B. 5 cm

C. 3 cm

D. 6 cm

Answer:

Watch Video Solution

224. The total surface area of a cylinder is $40\pi cm^2$. If its height is 5.5 cm then its base radius is :

A. 5 cm

B. 2.5 cm

C. 1.5 cm

D. 10 cm

Answer:

Watch Video Solution

225. The area of circular base of a right circular cone is 78.5 cm^2. If its height is 12 cm then its volume is :

A. $31.4cm^3$

B. $3.14cm^3$

C. $314cm^3$

D. None.

Answer:

Watch Video Solution

226. The base diameter of a cone is 11.3 cm and curved surface area is $355cm^2$. Its slant height is : (Taken $\pi = \frac{355}{113}$)

A. 11 cm

B. 9 cm

C. 5 cm

D. 10 cm

Answer:

Watch Video Solution