DEVESH TEDIA CLASSES

Above muthoot finance bank, awadhpuri, bhopal

WORKSHEET -MENSURATION

Class 08 - Mathematics

Section A

1. The base of a cone has a radius of 4 cm. The height of the cone is 6 cm. Find the volume of the cone. **[1]**

   a) 91π cm^3 b) 16π cm^3

   c) 64π cm^3 d) 32π cm^3

2. A cube whose side is 5 cm will have total surface area = _____ cm^2. **[1]**

   a) 80 b) 60

   c) 150 d) 120

3. The length of a cube is double than the other cube. The ratio between volumes of both, cubes is- **[1]**

   a) 8 : 1 b) 1 : 1

   c) 4 : 1 d) 2 : 1

4. The dimensions of an iron box are 9 ft $\times$ 4.4 ft $\times$ 7.2 ft. What is the cost of the iron sheet used to make the box, if the cost of the sheet is Rs 0.90 per square foot? **[1]**

   a) Rs 344.94 b) Rs 644.94

   c) Rs. 244.94 d) Rs 444.94

5. What is the surface area of the four walls of the water tank, if its length is 8 ft, width 5 ft and height 5 ft? **[1]**

   a) 130 ft^2 b) 126 ft^2

   c) 128 ft^2 d) 132 ft^2

6. A metallic cylindrical pipe has outer radius of 3 cm and an inner radius of 2 cm. If the length of the pipe is 70 cm, then the volume of metal in the pipe, in cm^3, is **[1]**

   a) 280π b) 630π

   c) 910π d) 350π

7. 160 m^3 of water is to be used to irrigate a rectangular field whose area is 800 m^2. What will be the height of the water level in the field? **[1]**

   a) 0.2 m b) 1.6 m

   c) 2 m d) 0.4 m

8. How many cubes of sides 6 cm can be fitted into a cuboid of volume 216 m^3? **[1]**

   a) 10^6 b) 10^5

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c) 10^4 d) 10^3

9. The ratio between the radius of the base and the height of a cylinder is 2 : 3. If its volume is 12936 cm^3, the total surface area of the cylinder is **[1]**

a) 3480 cm^2 b) 3080 cm^2

c) 4260 cm^2 d) 4860 cm^2

10. Find the total surface area of a cube whose side is 14 cm. **[1]**

a) 1175 cm^2 b) 1170 cm^2

c) 1296 cm^2 d) 1176 cm^2

11. 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. The height of the cone is **[1]**

a) 10 m b) 15 m

c) 12 m d) 18 m

12. What is the surface area of the drawing box, if its length is 16 cm, width 6 cm, and height 3 cm? **[1]**

a) 25cm^2 b) 200cm^2

c) 162cm^2 d) 324cm^2

13. Find what length of canvas 12 meters in width is required to make a conical tent 12 meters in diameter and 6.3 meters in slant height. **[1]**

a) 7.7 m b) 8.8 m

c) 6.6 m d) 9.9 m

14. The dimensions of an iron box are 9ft $\times$ 4.4ft $\times$ 2.5ft. What is the cost of the iron sheet used to make the box, if the cost of the sheet is Rs 6 per square foot? **[1]**

a) Rs 777.2 b) Rs 877.2

c) Rs 977.2 d) Rs 887.2

15. _____ of a solid is the sum of the areas of its faces. **[1]**

a) Area b) Volume

c) Perimeter d) Surface area

16. The surface area of a cube is 486 sq m, then its volume is **[1]**

a) 729 m^3 b) 781 m^3

c) 625 m^3 d) 879 m^3

17. A cube whose side is 5 cm will have surface area is equal to **[1]**

a) 100 cm^2 b) 50 cm^2

c) 125 cm^2 d) 120 cm^2

18. The height of a right circular cone is 9 cm. If its volume is 432π cm^3, what is the slant height of the cone? **[1]**

a) 10 cm b) 12 cm

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c) 20 cm d) 15 cm

19. If the radius of a cylinder is increased from 4 cm to 16 cm and the surface area of it kept same. If its height is 4 cm, what will be its new height? **[1]**

a) 4 cm b) 2 cm

c) 1 cm d) 3 cm

20. The capacity of a closed cylindrical water tank is 46.2 kilolitres. If the height of the cylinder is 1.2 m, then what is its radius? **[1]**

a) 2.8 m b) 3.5 m

c) 30 m d) 20 m

21. A rectangular sheet of paper 22 cm $\times$ 12 cm can be carved to form the lateral surface of a right circular cylinder in two ways. Taking $\pi = \frac{22}{7}$, the difference between the volumes of the two cylinders thus formed is **[1]**

a) 252 cm^3 b) 462 cm^3

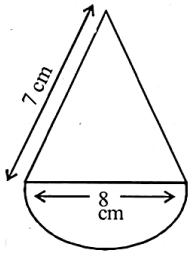
c) 210 cm^3 d) 200 cm^3

22. A beam 9 m long, 40 cm wide and 20 cm deep is made up of iron which weighs 50 kg per cubic metre. The weight of the beam is **[1]**

a) 42 kg b) 45 kg

c) 32 kg d) 36 kg

23. The figure below is made up of an isoceles triangle and a semi-circle. Find the perimeter of the figure. **[1]**



a) 7(4π) cm b) 2(2 + 7π) cm

c) 14π cm d) 2(2 + 5π) cm

24. The internal diameter of a cylinder is 60 cm and height is **h** cm, it is completely filled with water. To fill in such quantity of water, how many cylinders of 10 cm internal diameter and **h** cm height are required is **[1]**

a) 12 b) 18

c) 6 d) 36

25. If the total surface area of a cube is 486 cm^2, then its lateral surface area. **[1]**

a) 342 cm^2 b) 243 cm^2

c) 432 cm^2 d) 324 cm^2

26. A cylinder has a volume of 965 cm^3. If the height of the cylinder is 16 cm, find the radius. **[1]**

a) 4.38 cm b) 2.2 cm

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c) 8.8 cm

d) 3.3 cm

27. The ratio of total surface area to lateral surface area of a cylinder whose radius is 80 cm and height 20 cm is: **[1]**

a) 5 : 1

b) 4 : 1

c) 3 : 1

d) 2 : 1

28. The large cube is made up of small cubes each with an edge of 4 units. What is the surface area of the resultant cube, if one cube in the middle of the top row is removed? **[1]**

a) 1500 square units

b) 928 square units

c) 918 square units

d) 938 square units

29. What is the volume of a cone, if its radius is 9 cm and its curved surface area is 423.9 cm^2? **[1]**

a) 2345 cm^3

b) 1015.74 cm^3

c) 3815 cm^3

d) 1272 cm^3

30. If the radius of the base of a right circular cone is 9r mm. and its height is equal to the radius of the base, find its volume in mm^3. **[1]**

a) $252\ \pi r^3$

b) $200\ \pi r^3$

c) $248\ \pi r^3$

d) $243\ \pi r^3$

31. **Assertion (A):** The area of a rhombus is 84 sq. m.If its perimeter is 40 m. then its altitude is 8.4 m. **[1]**

Reason (R): Area of parallelogram = base $\times$ height.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

32. **Assertion (A):** The lateral surface area of cylinder having diameter 28cm and height 8 cm is $704cm^2$. **[1]**

Reason (R): The total surface area of cylinder is $2\pi r(r + h)$. where r is the radius and h is height of cylinder.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

33. **Assertion (A):** A square sheet of side 6 m is cut off from a rectangular sheet of dimensions 12m by 10 m. The area of remaining sheet is 84 m^2. **[1]**

Reason (R): Area is the part of plane occupied by the closed figure.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

34. **Assertion (A):** The height of a cuboid with area of the base as 284 sq. cm and volume as 6248 **[1]**

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cu.cm is 11 cm.

Reason (R): The volume of cuboid is (length $\times$ breadth $\times$ height) cm.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

35. **Assertion (A):** The total surface area of cuboid of length 30 cm, breadth 18 cm and height 22 cm is 3198 cm^2. **[1]**

Reason (R): To find the total surface area of cuboid, we find the sum of the areas of all six surfaces.

a) Both A and R are true and R is the correct explanation of A.

b) Both A and R are true but R is not the correct explanation of A.

c) A is true but R is false.

d) A is false but R is true.

Section B

36. Metallic discs of radius 0.75 cm and thickness 0.2 cm are melted to obtain 508.68 cm^3 of metal. Find the number of discs to be melted. (use π = 3.14) **[2]**

37. In a rhombus, one diagonal is five times the other. If the area of the rhombus is 1000 sq. cm, find the length of the diagonals **[2]**

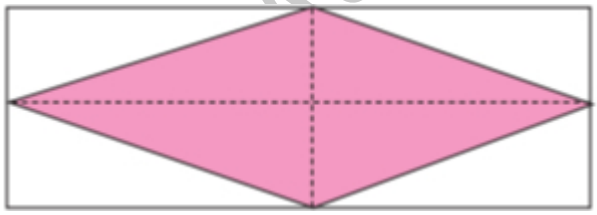
38. A cuboid is of measures 60 cm $\times$ 54 cm $\times$ 30 cm. How many small cubes with side 6 cm can be placed in the given cuboid? **[2]**

39. A rectangular examination hall having seats for 500 candidates has to be built so, as to allow 4 cubic metres of air and 0.5 square metres of floor area per candidate. If the length of hall is 25 m, find the height and breadth of the hall. **[2]**

40. A truck carrying 7.8 m^3 concrete arrives at a job site. A platform of width 5 m and height 2 m is being constructed at the site. Find the length of the platform, constructed from the amount of concrete on the truck? **[2]**

41. A carpenter makes a box that has a volume of 13400 cm^3. The base has an area of 670 cm^2. What is the height of the box? **[2]**

42. Find the area of the shaded rhombus if the length of the rectangle is 9.2 cm and the breadth is 6.4 cm. **[2]**



43. The radius of the base of the cylinder is 7 mm, and its total surface area is 2640 mm^2. What is the height of the cylinder? **[2]**

44. Find the total surface area of the following cuboids: **[2]**

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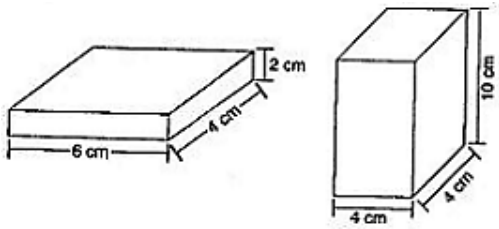
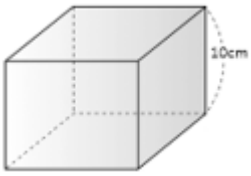


45. There is a cuboid whose base is a square and height is 10 cm. If the area of one side face is 120 cm^2. What is the total surface area of the cuboid? **[2]**

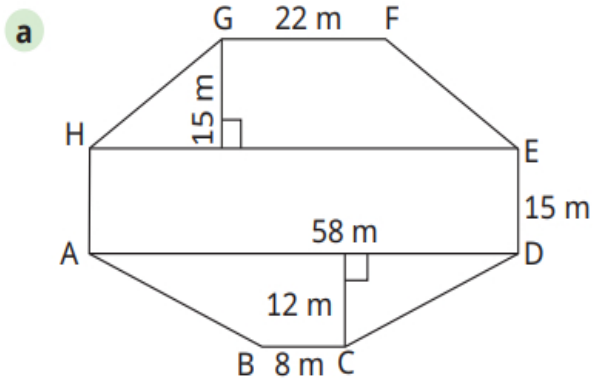


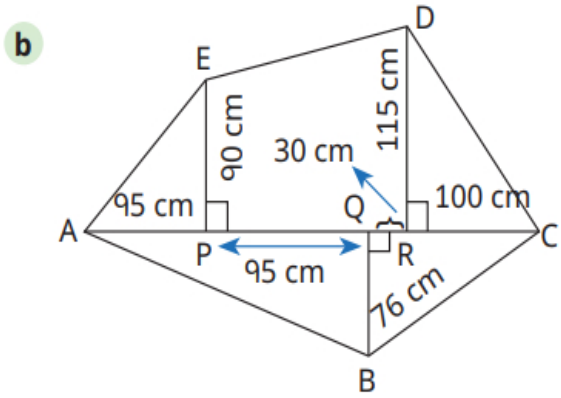
Section C

46. Find the area of polygon ABCDEF, if AD = 18cm, AQ = 14 cm, AP = 12 cm, AN = 8 cm, AM = 4 cm, and FM, EP, QC and BN are perpendiculars to diagonal AD. **[3]**

47. Find the surface area of a chalk box whose length, breadth and height are 16cm, 8cm and 6cm respectively. **[3]**

48. Find the area of the polygons. **[3]**





49. Daniel is painting the walls and ceiling of a cuboidal hall with length, breadth and height of 15 m, 10 m and 7 m respectively. From each can of paint 100 m^2 of area is painted. How many cans of paint will she need to paint the room? **[3]**

50. Create a word problem to find the area of a combined shape. **[3]**

51. An aquarium is in the form of a cuboid whose external measures are $80cm \times 30cm \times 40cm$. The base, side faces and back face are to be covered with a coloured paper. Find the area of the paper needed. **[3]**

52. The length and breadth of a wooden box are 50 cm and 30 cm, respectively. The total cost of packaging the box is ₹26,250 at the rate of ₹0.25 per cm^2. What is the height of the box? **[3]**

53. A rectangular sheet of dimensions 25 cm $\times$ 7 cm is rotated about its longer side. Find the volume and the whole surface area of the solid thus generated. **[3]**

54. How many small cubes with edge of 20cm each can be just accommodated in a cubical box of 2m edge? **[3]**

55. The lateral surface area of a hollow cylinder is 4224 cm^2. It is cut along its height and formed a rectangular sheet of width 33 cm. Find the perimeter of rectangular sheet? **[3]**

Section D

Maths -h sir

Question No. 56 to 60 are based on the given text. Read the text carefully and answer the questions: **[5]**

The internal measures of a cuboidal room are 12 m $\times$ 8 m $\times$ 4 m.

56. Total surface area of cuboid is _____ where h, l and b are the height, length and width of the cuboid respectively.

57. Find the surface area of 4 walls?

a) 160 m^2 b) 150m^2

c) 128 m^2 d) 384 m^2

58. Find the total cost of whitewashing all four walls of a room, if the cost of white washing is ₹ 5 per m^2.

a) ₹ 900 b) ₹ 1000

c) ₹ 800 d) ₹ 850

59. What will be the cost of white washing if the ceiling of the room is also whitewashed?

a) ₹ 1280 b) ₹ 1240

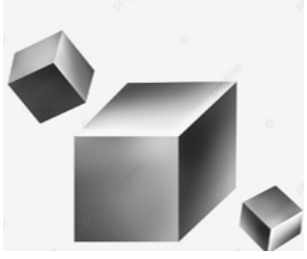
c) ₹ 1500 d) ₹ 1250

60. Total surface area and curved surface area of cuboid are same.

a) True b) False

Question No. 61 to 65 are based on the given text. Read the text carefully and answer the questions: **[5]**

Three metal cubes of sides 6 cm, 8 cm and 10 cm are melted and recast into a big cube.



61. Volume of the cube with side 6 cm is _____.

62. Find the Volume of the cube with side 8 cm.

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a) 256 cm^3 b) 512 cm^3

c) 64 cm^3 d) 384 cm^3

63. Find the Volume of the cube with side 10 cm.

a) 600 cm^3 b) 100 cm^3

c) 400 cm^3 d) 1000 cm^3

64. Find the Volume of the big cube?

a) 1728 cm^3 b) 1782 cm^3

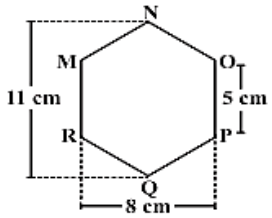
c) 1872 cm^3 d) 1600 cm^3

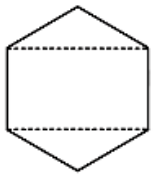
65. The side of big cube is 14cm.

a) True b) False

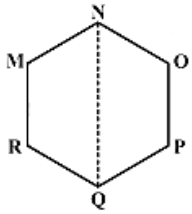
66. The dimensions of a cuboid are in the ratio of 2:3:4 and its total surface area is 208m^2. Find its dimensions. **[5]**

67. There is a hexagon MNOPQR of side 5 cm (Fig.). Aman and Ridhima divided it in two different ways (Fig). Find the area of this hexagon using both ways. **[5]**



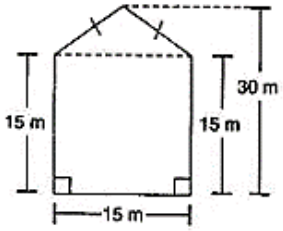


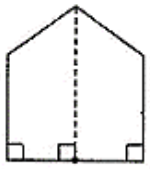
Ridhima's method



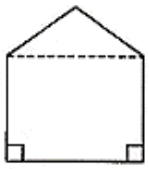
Aman's method

68. There is a pentagonal shaped park as shown in the figure. For finding its area Jyoti and Kavita divided it in two different ways. **[5]**





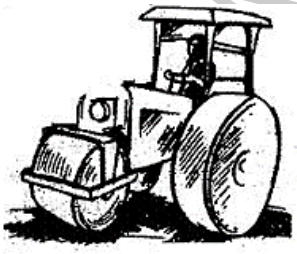
Jyoti's diagram



Kavita's diagram

Find the area of this park using both ways. Can you suggest some other way of finding area?

69. A road roller takes 750 complete revolutions to move once over to level a road. Find the area of the road if the diameter of a road roller is 84 cm and length is 1 m. **[5]**

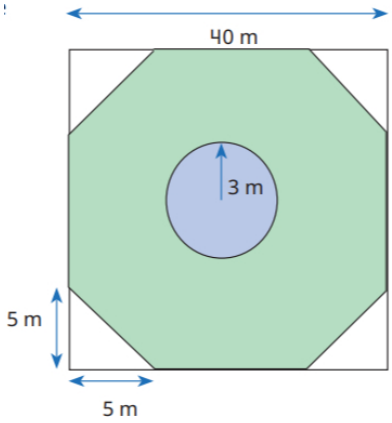


70. A covered wooden box has the inner measures as 125cm, 55cm and 25cm and thickness of wood is 2.5cm. Find the volume of the wood. **[5]**

71. Water flows into a tank with base measurements of 250 m × 100 m through a square pipe measuring 1.5 m × 1.5 m at the rate of 25 km per hour. In how much time (in minutes) will the water level rise to 3 m? **[5]**

Vijay sh sir

72. Shikhar transformed his square shaped plot of length 40 m into a farm to give shelter to cows. **[5]**
The farm is designed as shown:



a 4 congruent triangular regions are carved from all corners of the square. Each triangle has 2 equal sides of length 5 m.

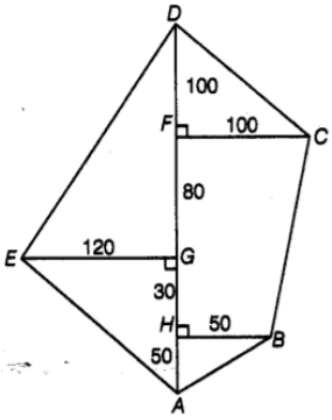
b There is a circular swimming pool of radius 3 m at the centre of the plot.

c The remaining area of the plot is covered with grass to feed the cows. If the grass is planted at a rate of ₹15 per sq. m, what is the cost of planting the grass? Do you feed animals?

73. An iron pipe is 21cm long and its exterior diameter is 8cm. If the thickness of pipe is 1cm and iron weighs 9g/cm^3. **[5]**

74. The internal measures of a cuboidal room are $12m \times 8m \times 4m$. Find the total cost of whitewashing all four walls of a room, if the cost of white washing is ₹5 per m^2. What will be the cost of white washing if the ceiling of the room is also whitewashed? **[5]**

75. Find the area of the following fields. All dimensions are in metres: **[5]**



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