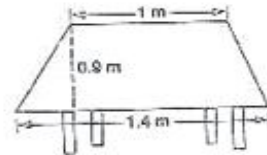
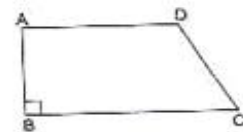


MENSURATION

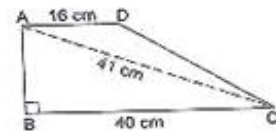
1. Find the area of a trapezium whose parallel sides are 24 cm and 20 cm and the distance between them is 15 cm.
2. Find the area of a trapezium whose parallel sides are 38.7 cm and 22.3 cm, and the distance between them is 16 cm.
3. The shape of the top surface of a table is trapezium. Its parallel sides are 1 m and 1.4 m and the perpendicular distance between them is 0.9 m. Find its area.



4. The area of a trapezium is 1080 cm^2 . If the lengths of its parallel sides be 55 cm and 35 cm, find the distance between them.
5. A field is in the form of a trapezium. Its area is 1586 m^2 and the distance between its parallel sides is 26 m. If one of the parallel sides is 84 m, find the other.
6. The area of a trapezium is 405 cm^2 . Its parallel sides are in the ratio 4 : 5 and the distance between them is 18 cm. Find the length of each of the parallel sides.
7. The area of a trapezium is 180 cm^2 and its height is 9 cm. If one of the parallel sides is longer than the other by 6 cm, find the two parallel sides.
8. In a trapezium-shaped field, one of the parallel sides is twice the other. If the area of the field is 9450 m^2 and the perpendicular distance between the two parallel sides is 84 m, find the length of the longer of the parallel sides.
9. The length of the fence of a trapezium-shaped field ABCD is 130 m and side AB is perpendicular to each of the parallel sides AD and BC. If $BC = 54 \text{ m}$, $CD = 19 \text{ m}$ and $AD = 42 \text{ m}$, find the area of the field.



10. In the given figure, ABCD is a trapezium in which $AD \parallel BC$, $\angle ABC = 90^\circ$, $AD = 16 \text{ cm}$, $AC = 41 \text{ cm}$ and $BC = 40 \text{ cm}$. Find the area of the trapezium.
Hint. $AB^2 = (AC^2 - BC^2)$.



11. The parallel sides of a trapezium are 20 cm and 10 cm. Its nonparallel sides are both equal, each being 13 cm. Find the area of the trapezium.
12. The parallel sides of a trapezium are 25 cm and 11 cm, while its nonparallel sides are 15 cm and 13 cm. Find the area of the trapezium.
13. A rectangular water tank is 12 m long and 8 m wide. If it contains a maximum of 480000 l of water, what is its depth?
14. Two cubes each of side 5 cm are placed together. Find the volume of cuboid, thus obtained.
15. A box is $54 \text{ cm} \times 45 \text{ cm} \times 300 \text{ cm}$. How many soaps can be fitted in it if each measures $9 \text{ cm} \times 5 \text{ cm} \times 3 \text{ cm}$?
16. A water reservoir is 2 m long, 1.5 m wide and 1.5 m high. How many litres of water can it hold?
17. A cuboid is made of metal. It is $27 \text{ cm} \times 18 \text{ cm} \times 12 \text{ cm}$. It is melted and recast into small cubes with an edge 3 cm in length. How many cubes are made?
18. The cover box of a laptop measures 45 cm by 40 cm by 30 cm. If a cardboard packet contains a maximum of 15 such cover boxes of laptops, find the volume of the cardboard packet.
19. A rectangular block of ice measures $42 \text{ cm} \times 25 \text{ cm} \times 18 \text{ cm}$. Calculate its weight in kilograms if 1 cm^3 of ice weighs 0.9 grams.
20. Find the volume of the cuboids whose
 - (i) $l = 15 \text{ cm}$, $b = 7 \text{ cm}$ and $h = 6 \text{ cm}$
 - (ii) $l = 2.3 \text{ m}$, $b = 30 \text{ cm}$ and $h = 7 \text{ cm}$
21. Find the number of cubes of 4 cm long that can be made from a cuboid of dimensions $24 \text{ cm} \times 20 \text{ cm} \times 12 \text{ cm}$.
22. How many 4 cm long cubes can be cut from a cube whose edges are 20 cm in length?
23. The volume of a cube is 64 cm^3 . Find the length of its edge.

46. The curved surface area of a 14 m high cylinder is 352 m^2 . Find the volume of the cylinder.
47. A 21 cm long cylindrical iron pipe has exterior diameter 8 cm. If the thickness of the pipe is 1 cm and iron weighs 8 g/cm^3 , then find the weight of the pipe.
48. Find the volume of the cylinder which is formed by rolling a rectangular sheet of dimensions $44 \text{ cm} \times 12 \text{ cm}$ along its length.
49. A cylindrical tank has a capacity of 1131.90 m^3 . Find the circumference of the base of a cylinder if its height is 15 m.
50. The diameter of a pipe of length 20 m is 56 cm. Find the cost of painting the surface of the pipe at the rate of ₹ 12 per m^2 .
51. Find the amount of water in the cylindrical vessel of length 21 m and radius 3.5 m.
52. How many cubic metres of earth must be dug out to sink a well which is 8 m deep and has a diameter of 28 m? If the earth taken out is spread over a rectangular plot 22 m by 16 m, what is the height of the platform so formed?
53. A roller of diameter 84 cm having length 120 cm takes 1000 complete revolutions to cover a playground field. Find the area of the field in m^2 .

QUICK RECALL

- The magnitude of the region enclosed by a plane figure is called the area of the figure.
- Area of a rectangle = (length \times breadth).
- Area of a square = (side)².
- Area of a parallelogram = base \times corresponding altitude.
- Area of a triangle = $\frac{1}{2} \times$ base \times corresponding altitude.
- Area of a rhombus = $\frac{1}{2} \times$ product of its diagonals.
- Area of a trapezium = $\frac{1}{2} \times$ (Sum of parallel sides) \times Distance between the parallel sides.
- $1 \text{ cm}^2 = 100 \text{ mm}^2$ $1 \text{ dm}^2 = 100 \text{ cm}^2$
- $1 \text{ m}^2 = 100 \text{ dm}^2$ $1 \text{ dam}^2 = 10000 \text{ cm}^2 = 100 \text{ m}^2$
- $1 \text{ hm}^2 = 10000 \text{ m}^2$ $1 \text{ km}^2 = 10^6 \text{ m}^2$
- $1 \text{ are} = 100 \text{ m}^2$ $1 \text{ hectare} = 100 \text{ ares} = 10000 \text{ m}^2$
- A solid bounded by six rectangular plane faces is called a cuboid.
- A cuboid of equal length, breadth and height is called a cube.
- A cuboid has 12 edges, 8 vertices and 6 rectangular faces.
- The sum of the areas of all the six faces of a cuboid is called the surface area of the cuboid.
- Volume of a cuboid = $l \times b \times h$
- Volume of a cube = (side)³

24. The rainfall on a certain day was 4 cm. How many litres of water fell on 4 hectares of field on that day?
25. What will happen to volume of a cube, if its edge is doubled?
26. Find the volume of a cuboid whose length is double its breadth and height is half of the breadth.
27. What will be the labour charges for digging a cuboidal pit 6 m long, 5 m broad and 4 m deep at the rate of ₹ 15 per 1000 cm³?
28. A swimming pool is 250 m long and 150 m wide. If 9375 m³ of water is pumped into it, find the height of the water level.
29. If the length, breadth and height of a cuboid are 48 cm, 24 cm and 12 cm respectively, find the side of a cube whose volume is equal to the volume of a cuboid.
30. Find the total surface area and the lateral surface area of the cubes whose edges are.
 (i) 13 cm (ii) 7 m (iii) 2 m 25 cm (iv) 11 m
31. The dimensions of a cuboidal box are 2 m 50 cm × 1 m 25 cm × 75 cm. Find
 (i) the area of canvas required to cover this box; and
 (ii) the cost of canvas for covering the box at the rate of ₹ 4 per square metre.
32. The paint in a certain container is sufficient to paint an area equal to 9375 cm². How many bricks of dimensions 22.5 cm × 10 cm × 7.5 cm can be painted out of this container?
33. A cuboidal metallic box is 40 cm long, 30 cm wide and 20 cm high. Find the total surface area and lateral surface area of the box.
34. Each edge of a cube is 18 cm long. Find the total surface area and the lateral surface area of the cube.
35. The length, breadth and height of a cuboid are in the ratio of 4 : 3 : 2, and its total surface area is 5200 cm². Find the dimensions of the cuboid.
36. The walls and ceiling of a room are to be painted. If the length, breadth and height of the room are respectively 5.5 m, 3 m and 4.5 m, find the area to be painted.
37. Find the total surface area and the lateral surface area of the following cuboids whose dimensions are.
 (i) $l = 9$ cm, $b = 7$ cm, $h = 3$ cm. (ii) $l = 13$ cm, $b = 5$ cm, $h = 7$ cm.
38. A swimming pool is 18 m in length, 14 m in breadth and 5 m in depth. Find the cost of cementing its floor and walls at the rate of ₹ 12 per m².
39. Three equal cubes of side 5 cm are placed together. Find (i) the volume; (ii) the total surface area; and (iii) the lateral surface area of the resulting cuboid.
40. Ratio of surface areas of two cubes is 1 : 9. Find the ratio of their volumes.
41. Find the cost of painting a cube at ₹ 9.50 per m² whose edge is 5 m.
42. The lateral surface area of a cube is 256 cm². Find its total surface area.
43. The total surface area of a cube is 294 m². Find its volume.
44. The volume of a cube is 216 m³. Find its total surface area.
45. The floor of a rectangular hall has a perimeter of 200 m. If its height is 5 m, find the cost of painting its four walls at the rate of ₹ 25 per sq. m.