

11. Mensuration

Q 1 Find the volume of a cuboid whose length is 8 cm, breadth 6 cm and height 3.5 cm.

Mark (1)

Q 2 Find the altitude of a trapezium, the sum of the lengths of whose bases is 6.5 cm and whose area is 26 cm^2 .

Mark (1)

Q 3 Find the height of a cuboid whose volume is 275 cm^3 and base area is 25 cm^2 .

Mark (1)

Q 4 Find the area of a rhombus whose diagonals are of measurements 6 cm and 8 cm.

Mark (1)

Q 5 Find the volume of the cylinder whose base diameter is 14 cm and height is 10 cm.

Mark (1)

Q 6 Find the area of a triangle whose base is 4 cm and altitude is 6 cm.

Mark (1)

Q 7 Find the total surface area of a cube whose volume is 343 cm^3 .

Marks (2)

Q 8 Find the side of a cube whose surface area is 2400 cm^2 .

Marks (2)

Q 9 How many bricks will be required for a wall which is 8 m long, 6m high and 22.5 cm thick, if each brick measures $25 \text{ cm} \times 11.25 \text{ cm} \times 6 \text{ cm}$?

Marks (2)

Q 10 The diameter of garden roller is 1.4 m and it is 2 m long. How much area will it cover in 5 revolutions?

Marks (2)

Q 11 Find the volume of a cuboid whose length is 8 cm, width is 3 cm and height is 5 cm.

Marks (2)

Q 12 A cylindrical tank has a capacity of 5632 m^3 . If the diameter of its base is 16 m, find its depth.

Marks (2)

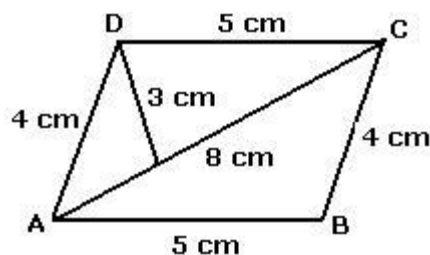
Q 13 Find the volume of 64 cubes whose one side is 4 cm.

Marks (2)

Q 14 Find the volume of a cylinder whose base radius is 14 cm and height is 35 cm.

Marks (2)

Q 15 Find the area of a parallelogram whose measurements are given in the following figure.



Marks (2)

Q 16 Find the total surface area of a cylinder whose base radius is 8 cm and height is 14 cm.

Marks (2)

Q 17 Find the area of a rhombus whose diagonals are of lengths 20 cm and 16 cm.

Marks (2)

Q 18 Find the height of cuboid whose volume is 490 cm^3 and base area is 35 cm^2 .

Marks (2)

Q 19 Find the volume of the cylinder whose height is 7 cm and radius is 20 cm.

Marks (2)

Q 20 Find the side of a cube whose surface area is 2400 cm^2 .

Marks (2)

Q 21 The diagonal of a quadrilateral shaped field is 24 cm and perpendicular dropped on it from the remaining opposite vertices are 6 m and 12 m. Find the area of the field.

Marks (3)

Q 22 A godown is in the form of a cuboid of measures $60 \text{ m} \times 40 \text{ m} \times 20 \text{ m}$. How many cuboidal boxes can be stored in it if the volume of one box 0.8 m^3 ?

Marks (3)

Q 23 The internal measures of a cuboidal room are $10 \text{ m} \times 8 \text{ m} \times 4 \text{ m}$. Find the total cost of whitewashing four walls of a room, if the cost of white washing is Rs 5 per m^2 .

Marks (3)

Q 24 Find the area of a rhombus whose side is 5 cm and its altitude is 4 cm. If one of its diagonal is 8 cm long, find the length of the other diagonal.

Marks (3)

Q 25 In a building there are 4 cylindrical pillars. The radius of each pillar is 21 cm and height is 5 m. Find the curved surface area of four pillars.

Marks (3)

Q 26 A rectangular paper of width 7 cm is rolled along its width and a cylinder of radius 20 cm is formed. Find the volume of the cylinder.

Marks (3)

Q 27 The perimeter of a trapezium is 52 cm. Its non-parallel sides are 10 cm each and the distance between two parallel sides is 8 cm. Find the area of the trapezium.

Marks (3)

Q 28 The parallel sides of a trapezium are 25 cm and 13 cm. Its non-parallel sides are equal, each being 10 cm. Find the area of the trapezium.

Marks (4)

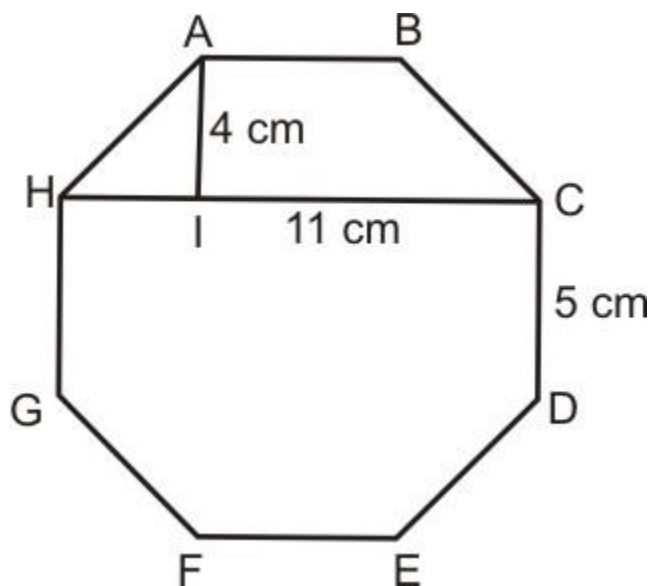
Q 29 The area of a trapezium is 384 cm^2 . Its parallel sides are in the ratio 3:5 and the distance between them is 12 cm. Find the length of each parallel side.

Marks (4)

Q 30 A cylindrical tube, open at both ends is made of metal. The internal diameter of the tube is 10.4 cm and its length is 25 cm. The thickness of the metal is 8 mm everywhere. Calculate the volume of the metal in the cylinder.

Marks (4)

Q 31 The top surface of a box is in the shape of a regular octagon as shown in the figure. Find the area of the octagonal surface.



Marks (4)

Q 32 A pool is 20 m long, 15 m broad and 4 m deep. Find the cost of cementing its floor and its walls at the rate of Rs. 12 per square metre.

Marks (4)

Q 33 A cylindrical container of radius 28 cm contains sufficient water to submerge a rectangular solid of dimensions $32 \text{ cm} \times 22 \text{ cm} \times 14 \text{ cm}$. Find the rise in the level of water, when the solid is completely submerged.

Marks (4)

Q 34 A rectangular piece of iron sheet is 44 m long and 20 m broad. It is rolled along its length to form a cylinder. Find the volume of the cylinder so formed.

Marks (4)

Q 35 The cost of papering the wall of a room, 12 m long, at the rate of Rs. 1.35 per square meter is Rs. 340.20. The cost of matting the floor at Re. 0.85 per square metre is Rs. 91.80. Find the height of the room.

Marks (4)

Q 36 A tin is in a cylindrical shape whose base has a diameter of 14 cm and height 20 cm. A label is placed around the surface of the container. If the label is placed 2 cm from top and bottom, what is the area of the label?

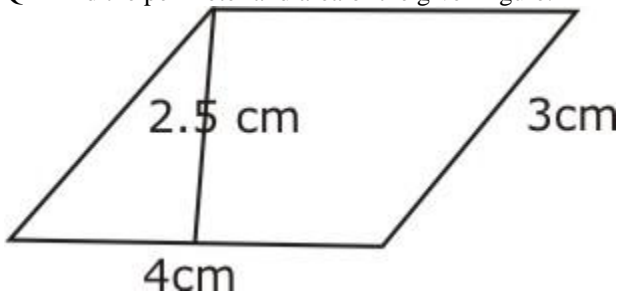
Marks (5)

Q 37 A rectangle piece of metal sheet 11 m x 4 m is folded without overlapping to make a cylinder of height 4 m. Find the volume of the cylinder.

Marks (5)

Most Important Questions

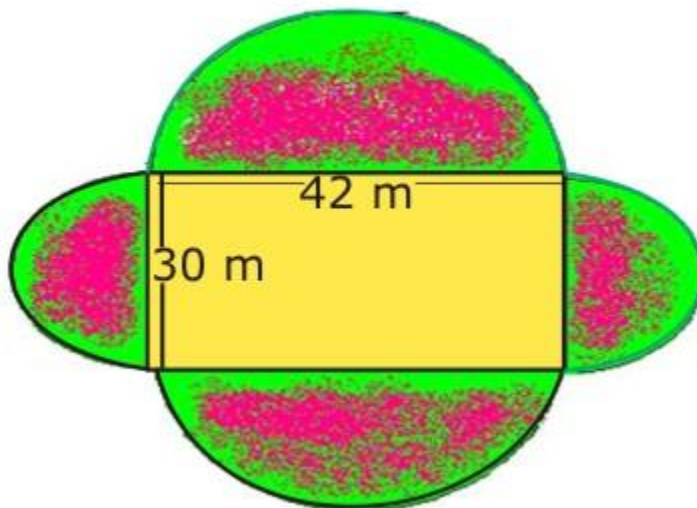
Q 1 Find the perimeter and area of the given figure:

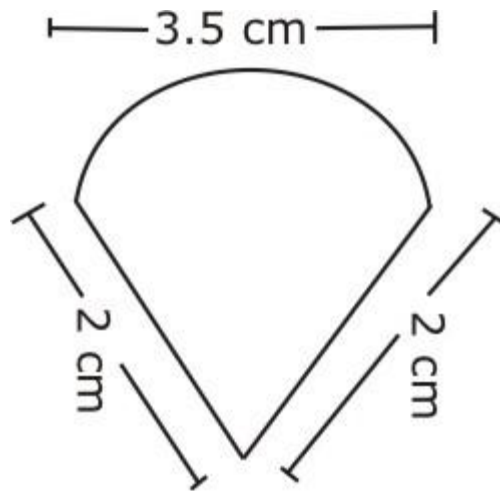


Q 2 Square and a rectangle have the same perimeter; if the side of the square is 16 m and the length of the rectangle is 18 m, find the breadth of the rectangle.

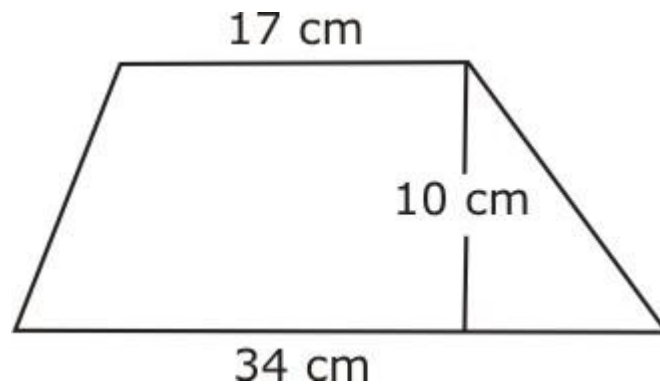
Q 3 Radha bought a rectangular plot of dimensions 120 m x 80 m and Radhika bought a square field of dimension 95 m. Who bought plot of greater area and by how much?

Q 4 Find the area of the field whose sides have semi-circular flowerbeds, as given in the figure.





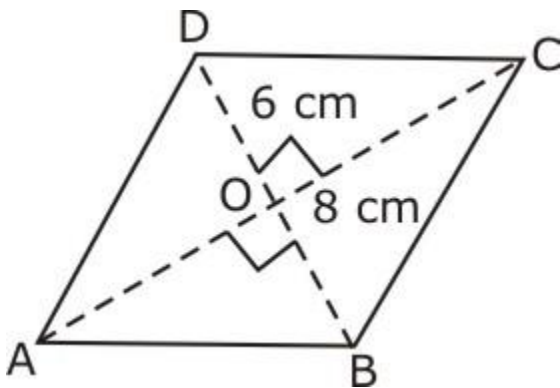
Q 5 Find the perimeter of the given figure



Q 6 Find the area of the following trapezium

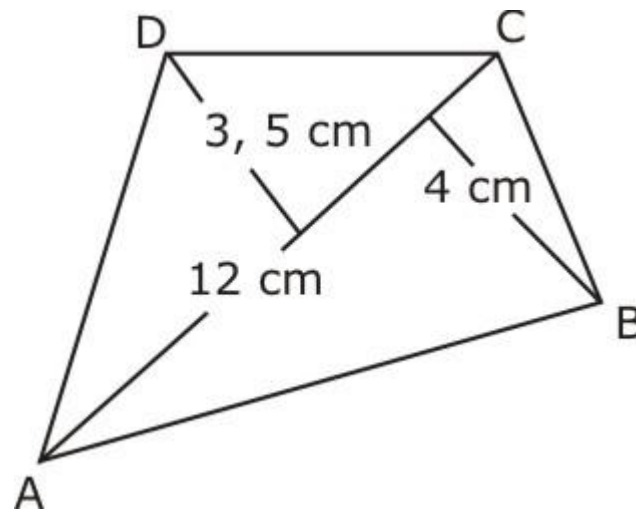
Q 7 The diagonals of a rhombus are 16 cm and 12 cm, find

- Its area
- Its length of the side
- Its perimeter



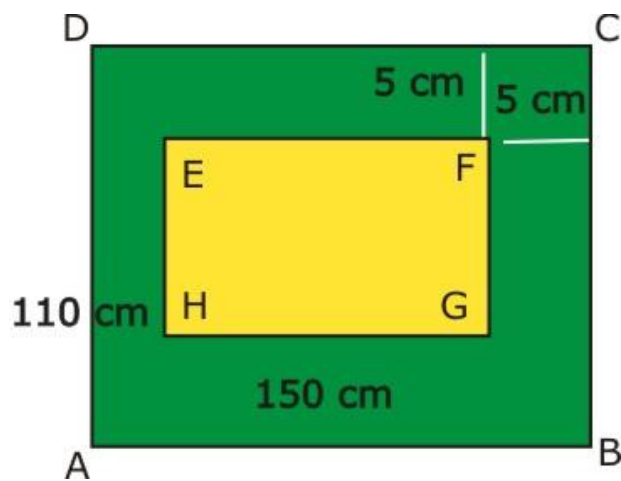
Q 8 The parallel sides of a trapezium are in the ratio 2: 3 and the area of the trapezium is 125 cm^2 . The distance between the parallel lines is 10 cm. Find the length of the parallel sides of the trapezium.

Q 9 The parallel sides of a trapezium are in the ratio 2: 3 and the area of the trapezium is 125 cm^2 . The distance between the parallel lines is 10 cm. Find the length of the parallel sides of the trapezium.

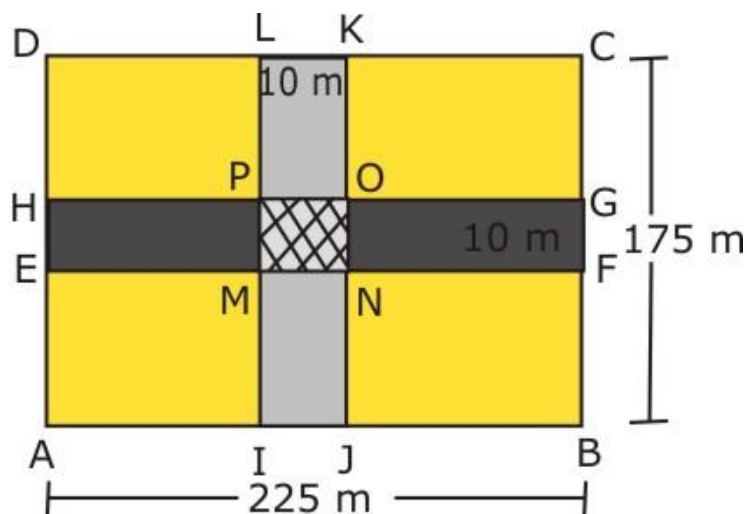


Q 10 Find the area of the given quadrilateral

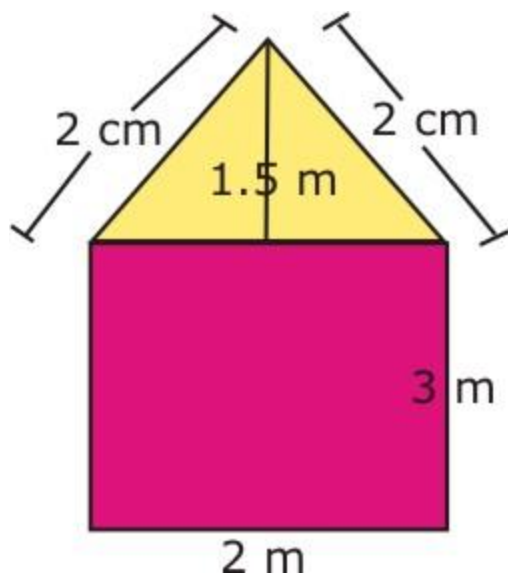
Q 11 In the given figure find the area of the path



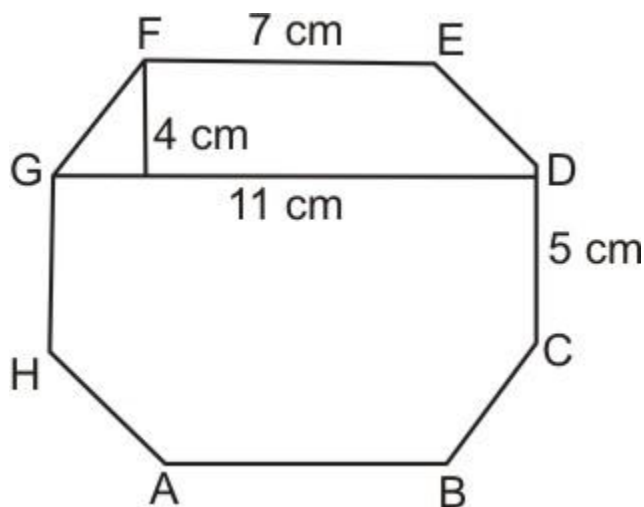
Q 12 Find the area of the roads, if two roads are running in cross-section, through the middle of a ground,



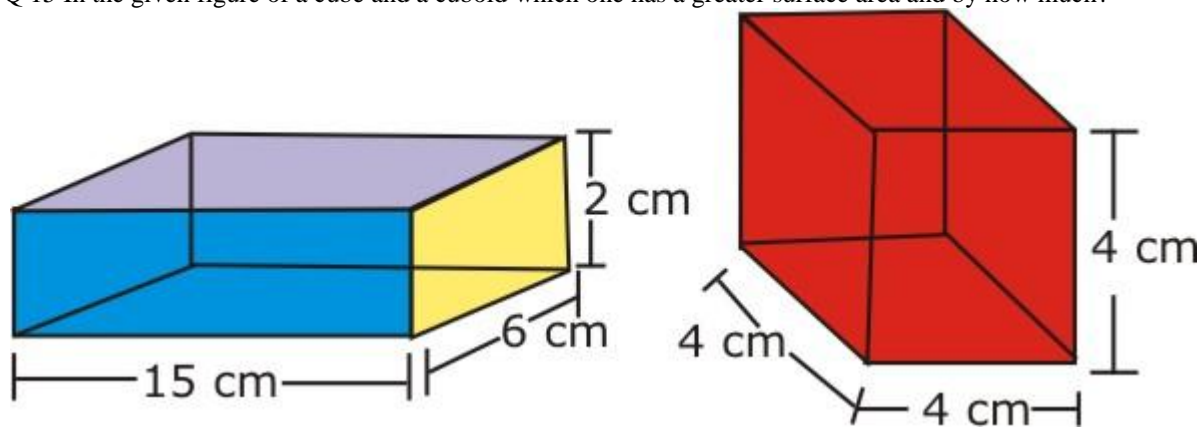
Q 13 Find the area and perimeter of the dollhouse.



Q 14 Find the area of the given octagon, by using suitable method



Q 15 In the given figure of a cube and a cuboid which one has a greater surface area and by how much?

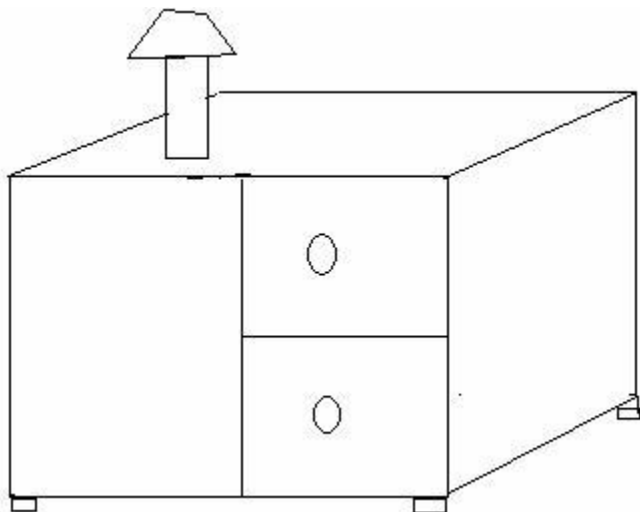


Q 16 The walls of a house of dimension 15 m x 12 m x 8 m are to be painted along with the ceiling at the rate of Rs.43 per m^2 . Find the total cost of painting.

Q 17 A talcum powder can is made of aluminium sheet, it is cylindrical in shape the height of the cylindrical can is 6 cm and the radius of the base is 1.4 cm, How much aluminium sheet is require to make 200 such cans?

Q 18 Three cubes of side 4 cm are joined to form a cuboid, find the surface area of the resulting cuboid.

Q 19 A wooden table has to be varnished on all the sides, leaving the bottom at the rate of Rs. 12.50 per m^2 . If the dimensions of the table are 50 cm x 27 cm x 70 cm, find the cost of varnishing the total surface.



Q 20 Find the height of a cylinder whose radius is 7 cm and the total surface area is 968 cm^2 .

Q 21 The lateral surface area of a hollow cylinder is 4224 cm^2 , it is cut along its height to get a rectangular sheet of width 33 cm. Find the perimeter of the rectangular sheet.

Q 22 A closed cylindrical tank of radius 7 m and height 3 m is made from a sheet of metal. How much metal sheet is required?

Q 23 Find the volume of a cuboid of dimension 12cm x 5 cm x 8 cm.

Q 24 Find the side of a cube whose volume is 216 m^3 , also find the lateral surface area of the cube.

Q 25 Find the volume of the cube in cm^3 , whose side is 6 dm.

Q 26 Identify the cases where we have to find volume and where to find the surface area:

- Painting the surface of a box.
- Filling water in a cylinder.
- Wrapping a gift.
- Filling oil in the can.

Q 27 A cylinder of height 7 cm and base diameter 3 cm is filled up with orange juice. How much juice can it hold?

Q 28 Find the height of a cuboid whose volume is 300 cm^3 and base area is 60 cm^2 .

Q 29 A rectangular aluminium sheet of dimensions 11 cm x 4 cm is folded without overlapping to make a cylinder of height 4 cm. Find the volume of the cylinder so formed.

Q 30 The capacity of a tank, which is cuboidal in shape, is 50,000 l. Find the breadth of the tank if its length and depth are respectively 2.5 m and 10 m.

Q 31 The trunk of a tree is cylindrical in shape and its circumference is 176 c m. If the length of the trunk is 3 m. Find the volume of timber that can be obtained from the trunk.

Q 32 A solid cube of side 12 cm is cut into 8 cubes of equal volume. What will be the side of the new cube?