MATHS

BOOKS - ICSE

MENSURATION (PLANE FIGURE)

Topic 1 3 Marks Questions

1. Find the area of a triangle whose sides are 18 cm, 24 cm and 30 cm.

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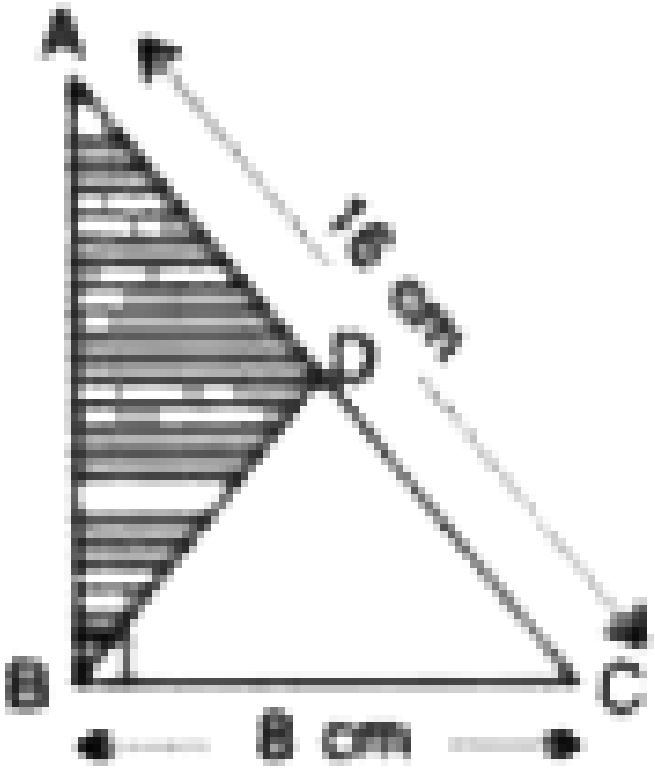
2. The given figure shows a right angled triangle ABC and an equilateral triangle BCD. Find the area of the shaded portion.



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3. In ΔABC, angle $A = 90^\circ$, side AB = x cm, AC = $(x + 5)$ cm and area = 150 cm^2. Find the sides of triangle.

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4. It the difference between the sides of right angles triangle is 3 cm and its area is 54 cm^2. Find its perimeter.

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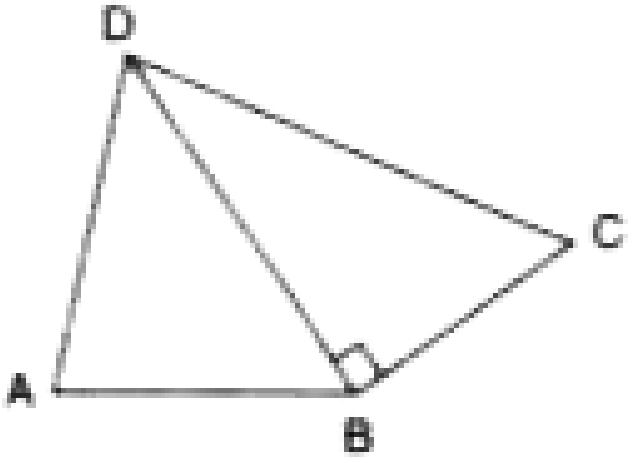
Topic 1 4 Marks Questions

1. Find the area and the perimeter of quadrilateral ABCD, given below, if, AB = 8 cm, AD = 10 cm, BD = 12 cm, DC 13 cm and $\angle DBC = 90^\circ$.



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2. The base of triangular field is three times its height. It the cost of cultivating the field at Rs. 36.72 per 100 m^2 is Rs. 49,572, find its base and height.

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3. The sides of triangular field ojne in the ratio $5:3:4$ and its perimeter is 180m. Find:

(i) Its area

(ii) Altitude of the triangle corresponding to its largest side.

(iii) The cost of levelling the field at the rate of Rs. 10 per square metre.

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4. Each of equal sides of an isosceles triangles is 4 cm greater than its height. It the base of the triangle is 24 cm. Calculate the perimeter and the area of the triangle.

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5. Find the area of a quadrilateral ABCD in which AB=3 cm, BC=4 cm, CD=4 cm, DA=5 cm and AC=5 cm

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6. Find the altitude and area of an isosceles triangle whose perimeter is 64 cm and where base is 2 cm.

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Topic 2 3 Marks Questions

1. The radii of two circles are 48 cm and 13 cm. Find the area of circle which has its circumference equal to the difference of the circumference of the given two circles.

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2. A circle of largest area is cut from a rectangular piece of card-board with dimension 55 cm and 42 cm. Find the ratio between the area of the circle cut and the area of the remaining card-board.

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3. Find the area of a ring shaped region enclosed between two concentric circles of radii 20 cm and 15 cm.

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4. There are two circular gardens A and B. The circumference of garden A is 1.760 km and the area of garden B is 25 times the area of garden A. Find the circumference of garden B.

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5. An express train is running between two stations with a uniform speed. If the diameter of each wheel at the train is 42 cm and each

wheel makes 1200 revolutions per minute, Find the speed of the train.

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6. The minute hand of a clock is 8 cm long. Find the area swept by the minute hand between 8: 30 am and 9:05 am.

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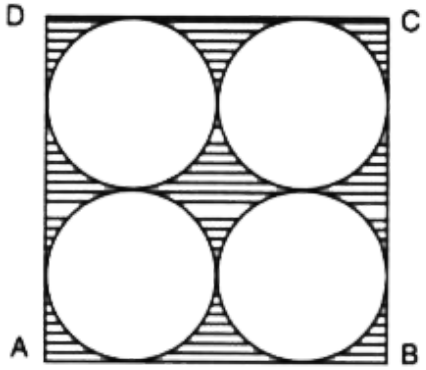
Topic 2 4 Marks Questions

1. The following figure shows a square card-board ABCD of side 28 cm. Four identical circle of largest possible size are cut from this card as shown below.



Find the area of the remaining card-board.

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2. The diameters of three circles are in the ratio 3:5:6. If the sum of the circumferences of three circles be 308 cm. Find the difference between the areas of the largest and the smallest of these circles.

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3. The wheels of a car are of diameter 80 cm each. How many complete revolutions does

each wheel make in 10 minutes when the car is travelling at a speed of 66 km per hour?

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4. The cost of fencing a circular field at the rate of Rs. 240 per metre is Rs. 52,800. The field is to be ploughed at the rate of 12.50 per m^2. Find the cost of ploughing the field.

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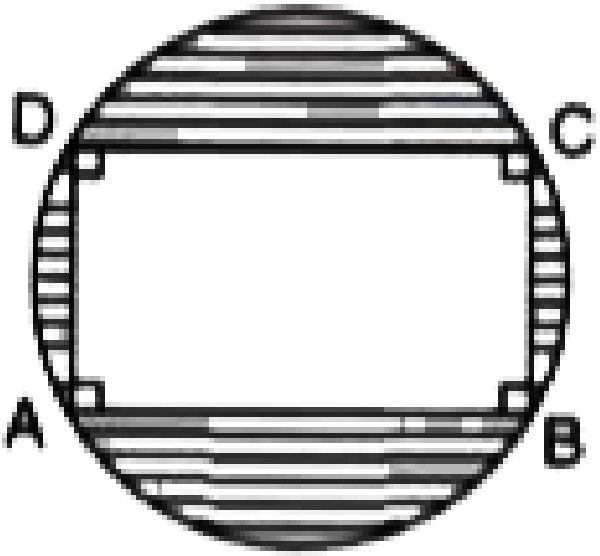
5. The given figure shows a rectangle ABCD inscribed in a circle as shown alongside.

If AB = 28 cm and BC = 21 cm, find the area of the shaded portion of the given figure.



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6. A metal wire, when bent in the form of an equilateral triangle of largest area, enclosed an area of $484\sqrt{3}cm^2$. If the same wire is bent into the form of a circle of largest area, find the area of circle.

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7. The cost of mowing a circular field at Rs. 16 per sq. m is Rs. 2464 field.

(i) The total area of the field.

(ii) The radius of the circular field

(iii) Cost of fencing the field at Rs. 12 per metre.

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Topic 3 3 Marks Questions

1. Three cubes whose edges are x cm, 8 cm, and 10 cm respectively, are melted and recast into a single cube of edge 12 cm. Find 'x'.

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2. The cost of papering the four walls of a room at 75 paise per square metre is Rs 240. The height of the room is 5 metres. Find the length and the breadth of the room, if they are in the ratio $5:3$.

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3. A tank 20 m long, 12 m wide and 8 m deep is to be made of iron sheet. It is open at the top.

Determine the cost of iron-sheet, at the rate of Rs. 12.50 per metre, if the sheet is 2.5 m wide.

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4. A hollow square-shaped tube open at both ends is made of iron. The internal square is of 5 cm side and the length of the tube is 8 cm. There are 192 cm^3 of iron in this tube. Find its thickness

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5. Four identical cubes are joined end to end to form a cuboid. If the total surface area of the resulting cuboid is 648 cm^2, find the length of edge of each cube.

Also, find the ratio between the surface area of the resulting cuboid and the surface area of a cube.

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6. The following figure shows a solid of uniform cross-section. Find the volume of the

solid.

All measurements are in centimetres. Assume that all angles in the figure are right angles.

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7. A rectangular field is 112 m long and 62 m broad. A cubical tank of edge 6 m is dug at each of the four corners of the field and the earth so removed is evenly spread on the remaining field. Find the rise in level.

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8. The dimension of a car petrol tank are $50cm \times 32cm \times 24cm$, which is full of petrol If car's average consumption is 15 km per litre, find the maximum distance that can be covered by the car.

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9. Three cubes are kept adjacently, edge to edge. If the edge of each cube is 7 cm, find the total surface area of the resulting cuboid.

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Topic 3 4 Marks Questions

1. The external dimensions of a closed wooden box are 27cm, 19cm and 11cm. If the thickness of the wood in the box is 1.5 cm, find:

volume of the wood in the box

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2. Water is discharged from a pipe of cross-section area $3.2cm^2$ at the speed of 5m//s. Calculate the volume of water discharged:

in cm^3 per sec

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3. A rectangular water-tank measuring $80cm \times 60cm \times 60cm$ is filled from a pipe of cross-sectional area $1.5cm^2$, the water

emerging at 3.2 m/s. How long does it take to fill the tank?

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4. A rectangular card-board sheet has length 32cm and breadth 26cm. Squares each of side 3cm, are cut from the corners of the sheet and the sides are folded to make a rectangular container. Find the capacity of the container formed.

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5. A swimming pool is 18m long and 8m wide. Its deep and shallow ends are 2m and 1.2m respectively. Find the capacity of the pool, assuming that the bottom of the pool slopes uniformly.

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6. When length of each side of a cube is increased by 3cm, its volume is increased by $2457cm^3$. Find its side. How much will its

volume decrease, if length of each side of it is reduced by 20%?

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7. The dimensions of a rectangular box are in the ratio $4:2:3$. The difference between cost of covering it with paper at Rs 12 per m^2 and with paper at the rate of 13.50 per m^2 is Rs 1,248. Find the dimensions of the box.

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8. The length, breadth and height of a closed wooden box are 20 cm, 12 cm and 8 cm. The thickness of the wood used to make the box is 10 mm. Find :

(i) the volumne of the wood.

(ii) the cost of the wood required to make the box, if 1 cm^3 of wood costs Rs. 8.50.

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