



# MATHS

## BOOKS - ICSE

### PERIMETER AND AREA

#### Example

1. A rectangle ABCD measures 16 cm by 14 cm  
Find its perimeter and area. Later a 2 – cm  
square is cut off from one end Find the

perimeter and area of the new polygon thus formed as shown in



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2. A wall is 11 m long and 4 m high. It has a door which is 2 m high and 1.5m wide. Find the cost of painting the wall at the rate of Rs 6 per sq. m.



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3. A rectangular running track measures 300 m by 250 m. Parul takes 4 rounds of this park every evening. What distance does she run in a week ?



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4. The area of a square is the same as that of a rectangle. If the side of a square is 60 m and the breadth of the rectangle is 48 m, find the length of the rectangle.



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5. A rectangle has perimeter 132 cm. Its length is 9 cm more than twice its breadth . Find its area.



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6. A rectangle is made up of 16 squares of side 1 cm each. What possible dimensions can the rectangle have ?



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7. The area of a square is 1 sq. m Express the area of this square is sq. mm.

A. 1,00,00,000 sq mm

B. 10,00,000 sq mm

C. 1,00,000 sq mm

D. 20,00,000 sq mm

**Answer: B**



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**8.** How many square tiles of side 1 cm each are required to cover a square area of side 4 m ?



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**9.** The area of a rectangle is 10 sq. cm. Express the area in terms of sq. m



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10. A rectangle measures 24 cm by 15 cm. One diagonal divides the rectangle into two triangles. Find the area of each triangle.



A.  $190\text{sq. m}$

B.  $180\text{sq. m}$

C.  $200\text{sq. m}$

D.  $370\text{sq. m}$

**Answer: B**



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11. One side of a parallelogram is 16 cm. With this side taken as base, the corresponding height is 9 cm. Find its area.

A. =  $149sq. m$

B. =  $164sq. m$

C. =  $144sq. m$

D. =  $244sq. m$

**Answer: C**







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12. ABCD is a parallelogram DP and BA are perpendiculars from D and B on AB and AD. Respectively. Given

$$AP = 16\text{cm}, BC = 10.8\text{cm}, DP = 9\text{cm},$$

find BQ.



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**13.** The base of a parallelogram is three times its corresponding height. If the area of the parallel logram is 147 sq. cm, find its base.



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**14.** PLOT is a parallelogram with base 22 cm and its corresponding height is 10 cm. If PO is a diagonal of this parallelogram, find the ara of the  $\Delta PLO$ .





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15. Find the area of a triangle with base = 18 cm and height = 12 cm.

A. 128 sq. cm

B. 110 sq. cm

C. 108 sq. cm

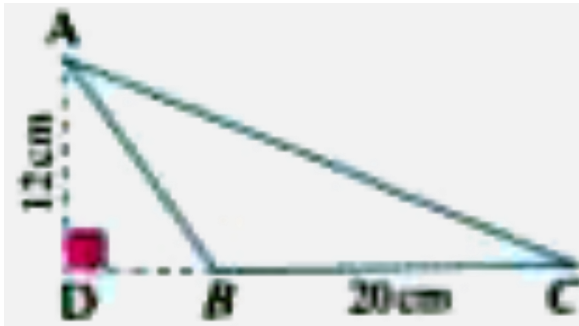
D. 109 sq. cm

**Answer: C**



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16. Find the area of the given obtuse-angled triangle ABC.



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17. The hypotenuse of a right-angled triangle is 17 cm. If the base is 15 cm, find the area.



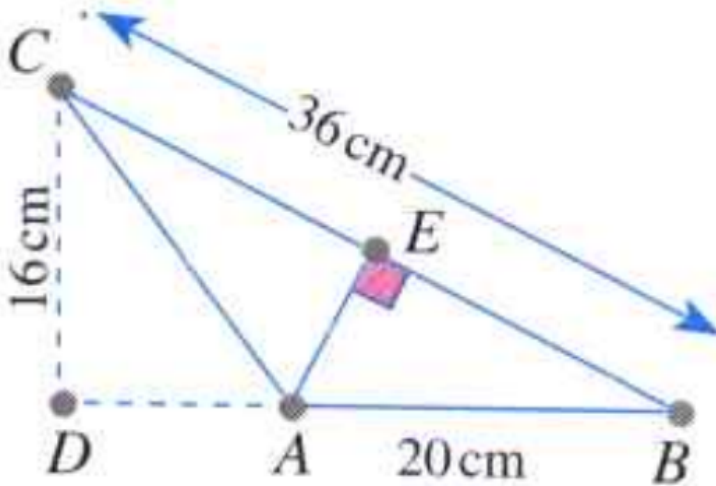
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**18.** The perimeter of an isosceles triangle is 36 cm and its base is 10 cm. Find its area.



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19. In the given triangle ABC, find AE.



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20. ABCD is a parallelogram DP is perpendicular to AB. Given  $BD = 5\text{cm}$ ,  $AP = 3\text{cm}$ . and area of

$\Delta ADP = 6$  sq. cm, find the perimeter of ABCD.



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21. PQRS is a quadrilateral with diagonal  $QS = 26\text{cm}$ .  $PB$  and  $RA$  are perpendiculars from P and R on QS such that  $PB = 8$  cm and  $RA = 12$  cm. Find the area of the quadrilateral PQRS.



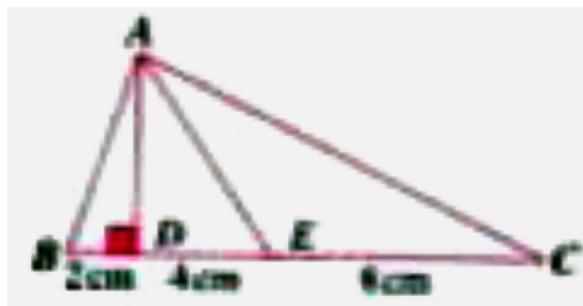
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22. A triangle  $ABC$  is such that  $AD$  is perpendicular to  $BC$  and  $E$  is a point on  $DC$ .

Also.                      Given                      that

$BD = 2\text{cm}$ ,  $DE = 4\text{cm}$ , and  $EC = 8\text{cm}$ .

Find the ratio of the areas of  $\triangle ABC$ ,  $\triangle ADE$  and  $\triangle AEC$ .



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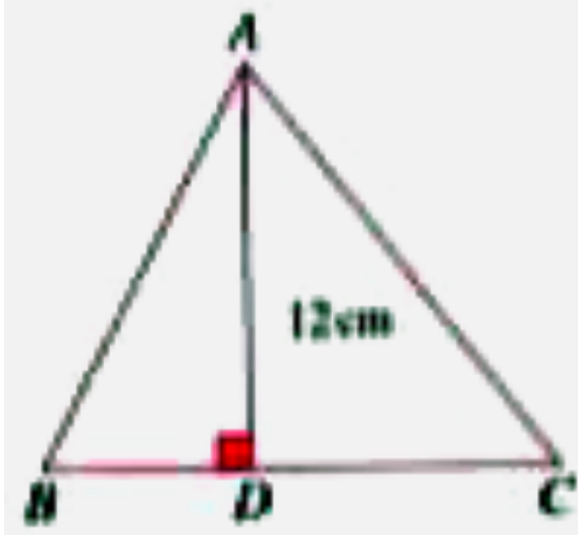
**23.** In  $\triangle ABC$ , side  $AC = 15$  cm.  $AD$  and  $BE$  are perpendiculars from  $A$  and  $B$  on opposite sides, respectively, If  $AD = 12$  cm and  $BE = 16$  cm, find the length to  $BC$ .



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**24.** In  $\triangle ABC$ ,  $AD$  is perpendicular to  $BC$ .  
If  $AD = 12$  cm, area of  $\triangle ADB = 90$  sq. cm.  
and area of  $\triangle ADB$ : area

$BD : DC = 2 : 3$ , find  $BD$  and  $DC$ .



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25. Find the circumference of a circle with radius  $3.5\text{cm}$ .

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**26.** Find the diameter of a circle if its circumference is 66 cm.

A. 41 cm

B. 31 cm

C. 21 cm

D. 51 cm

**Answer: C**



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27. Find the perimeter of a semicircular disc of radius 14 cm.



A. 42 cm

B. 92 cm

C. 72 cm

D. 82 cm

**Answer: C**



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**28.** What increase in the radius of a circle will result in an increase of  $18\frac{6}{7}$  cm in the circumference ?



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**29.** If the radius of a wheel is 14 cm, find the distance covered in 150 revolutions.

A. 15, 200cm

B. 13, 200cm

C. 14,  $200\text{cm}$

D. 16,  $200\text{cm}$

**Answer: B**



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**30.** Find the area of a circle with radius  $3.5\text{cm}$ .



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**31.** IF the radius of a circle is doubled, by how much will the area ?

A. 2 times

B. 3 times

C. 4 times

D. 5 times

**Answer: C**



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32. The area of a circle is  $36\pi$  sq.  $m$  Find its circumference.

A.  $18\pi cm$

B.  $12\pi cm$

C.  $14\pi cm$

D.  $16\pi cm$

**Answer: B**



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**33.** A circular park is of radius 35 m . A walkway 3.5m wide runs along its outer edge. Find the cost of constructing this walkway at the rate of Rs 170 per sq. m.



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**34.** Convert the as directed  
40 sq.m into sq. cm



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**35.** Convert the as directed

35 hectare into sq. m



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**36.** Convert the as directed

2.6 sq cm into sq. mm



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**37.** A rectangular plot is 60 long and 60 m wide. Two roads parallel to its sides run through the centre. The width of the road running parallel to the length is 2 m and that of the other road running parallel to its width is 1.5m. Find the area of the roads and the area of the remaining portion of the field.



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**38.** Find the area of the shaded region.



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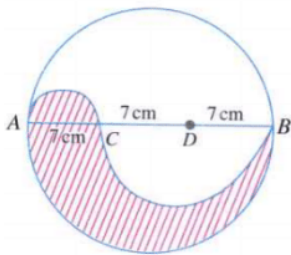
**39.** ABCD is a square of side 70 cm. Four quarter circles are drawn at each vertex of the square as shown in the Find the area of the shaded region.



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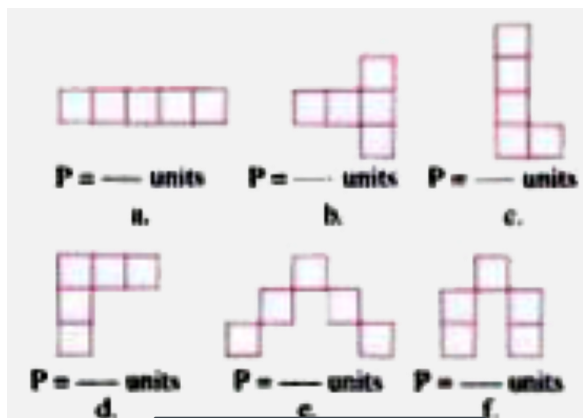
40. Given is a circle with  $AB$  as a diameter of 21 cm. Points  $C$  and  $D$  lie on the diameter such that  $AC = 7\text{cm}$ ,  $CD = DB = 7\text{cm}$ .

Semicircles are drawn on the diameter as shown. Find the area of the shaded region.



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1. The following figures are made of 5 squares each square has side of 1 unit length. Find the perimeter of each of the given



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2. Find the perimeter of a hexagon of side 7 cm.



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3. Find the area of a square of side 8 m.



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4. Find the area of a rectangle of length 12 cm and breadth 8.5 cm.

A. 109 sq. cm

B. 102 sq. cm

C. 106 sq. cm

D. 108 sq. cm

**Answer: B**



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5. Find the cost of levelling a field measuring 75 m by 60 m at the rate of Rs 8 per sq. m .





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6. Find the perimeter of an equilateral triangle of side 13 cm.



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7. Find the perimeter of an isosceles triangle with base 14 cm and equal sides 10 cm each.



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**8.** The perimeter of a rectangle is 32 cm. Find its maximum possible area if the sides of the rectangle are whole numbers only.



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**9.** Find the area of all possible rectangles whose sides are only whole numbers, given that the perimeter of the rectangles is 18 cm.



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**10.** The cost of wall-to-wall carpeting of the floor of a room is Rs 24,000 if the room is 20 m long and the carpet costs Rs 100 per sq. m, find the breadth of the room.

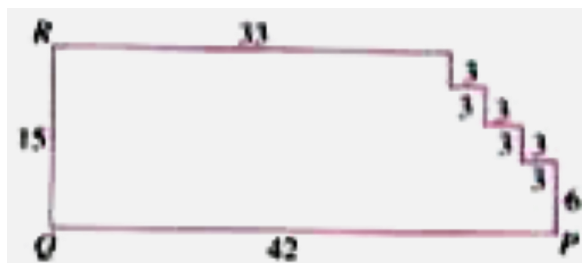


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## Exercise 17 1

**1.** PQRS is a rectangle measuring 42 cm by 15 cm. Find its perimeter and area. A portion from one end of the rectangle is cut off as

shown in the perimeter and area of the new figure thus formed.



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2. A garden is 20 m by 16 m. In the middle of the garden, there is a square cemented platform of side 3 m. Find the cost of weeding the garden at the rate of Rs 7 per sq. m





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3. A field is 30 m by 22 m. Along the length of the field, a rectangular plot of 9 m by 4 m is cut off for an entry gate and a small parking. How much will it cost to plant fresh grass in the field at the rate of Rs 45 per sq. m ?



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4. A wall is 12 long and 4 m high. There is a rectangular window measuring  $2.5\text{m}$  by  $2\text{m}$  in the wall Find how much it will cost to paint the wall at the rate of Rs 22 per sq. m.



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5. Sara takes 7 rounds of a park that measures 200 m by 150 m. What distance does she cover ? Express your answer in kilometers.



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6. A boundary hedge needs to be planted around a field measuring 150 m by 80 m. If 4 shrubs can be planted at every 1 m of hedge, how many shrubs will be planted around the field ?



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7. A wire is in the shape of a square of side 15 m. If it is opened and shaped as a rectangle of

width 12 m, find its length.



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**8.** A square and a rectangle are equal in area. If the side of the square is 24 cm and the length of the rectangle is 32 cm, find its breadth.



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**9.** Find the dimension of a rectangle whose perimeter is 112 cm and whose breadth is 4 cm



less than half its length.



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**10.** How many squares of each side 1 cm are required to build a square of side 8 cm ?



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**11.** A rectangle is made up of 12 square of side 1 cm. What possible dimensions can the rectangle have ?



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**12.** A rectangle measure 30 cm by 25 cm. A diagonal divides the rectangle into two triangles. Find the area of each triangle.



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**13.** Find the area of the polygons A and B inside the rectangle as given.





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**14.** Each of the given rectangles is composed of congruent polygons. Find the area of each polygon.



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**15.** Two friends need a triangular chart paper for a project. They buy a rectangular chart paper of length 30 inches and breadth 20

inches. They cut it across the diagonal and keep one piece each for their respective projects. Find the area of each friend's chart paper.



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## Exercise 17.2

1. Find the area of a parallelogram whose one side is 22 cm and its distance from the opposite side is 12 cm.



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2. The area of a parallelogram is 406 sq. cm. Its height is 14 cm. Find the length of one of its sides.



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3. The adjacent sides of a parallelogram are 12 cm and 10 cm, respectively. If the perpendicular distance between the longer

sides is 5 cm, find the perpendicular distance between the shorter sides.



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4. ABCD is a parallelogram. From C perpendiculars CS and CT are dropped upon AB and AD, respectively. Given  $AB = 16\text{cm}$ ,  $CS = 9\text{cm}$ , and  $CT = 8\text{cm}$ , find BC.



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5. Find the height of a parallelogram whose area is 320 sq. cm and base is 5 times its height.



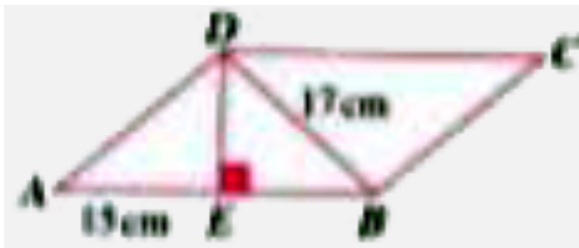
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6. The area of a parallelogram is 288 sq. m. Find the base given that its height is half its base.



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7. ABCD is a parallelogram where DE is perpendicular to AB. If  $BD = 17$  cm,  $AE = 15$  cm, and area of  $\triangle ADE = 60$  sq. cm, find the perimeter of ABCD.



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8. LMNO is a parallelogram where OP is perpendicular to AB. If  $OM = 20$  cm,  $LP = 9$  cm, and area of



$\Delta LPO = 54 \text{sq. cm}$ , find the perimeter of LMNO.



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9. The ratio between the base and height of a triangular field is 3:2. The cost of cultivating the field at Rs 65 per sq. m is Rs 3,12,000. Find the base and the height.



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**10.** The area of a triangle is  $315 \text{ sq. cm}$ . If the base is 18 cm, find its altitude.



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**11.** The legs of a right-angled triangle are in the ratio 5:12. If its area is  $120 \text{ sq. m}$ , find the legs.



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**12.** Find the area of a right-angled triangle with hypotenuse 25 cm and altitude 24 cm.



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**13.** Find the area of an isosceles triangle which has:

a . Base 16 cm and equal sides 17 cm each.

b. base 24 cm and equal sides 20 cm each.



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**14.** Find the area of a quadrilateral which has one diagonal measuring 22 cm, and the perpendiculars from the opposite vertices on this diagonal are 6 cm and 10 cm, respectively.



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**15.** The area of a quadrilateral is 780 sq. cm. One of its diagonals measures 30 cm. If the perpendicular from one of the opposite vertices on this diagonal is 15 cm, find the length of

the perpendicular on this diagonal from the other vertex.



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**16.** In  $\triangle ABC$ , the perpendicular from A to BC meets BC at D such that  $BD = 7\text{cm}$  and  $DC = 12\text{cm}$ . Find the ratio of the areas of the triangles ABD and ADC.



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17. The perpendicular from P and QR in the triangle  $\triangle PQR$  meets QR at S. Also, T is a point on SR such that  $QS = 3\text{cm}$ ,  $ST = 4\text{cm}$ , and  $TR = 8\text{cm}$ . Find the ratio of the areas of the triangles PQS, PST and PTR.



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18. In  $\triangle ABC$ ,  $AD$  and  $CE$  are perpendiculars from A and C on the opposite sides. If

$AD = 6\text{cm}$ .  $BC = 14\text{cm}$ ,  $AB = 10\text{cm}$ , find  
CE.



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19. In  $\triangle LMN$ ,  $NT \perp LM$ . Area of  
 $\triangle LMN = 72\text{sq. m}$  and  $NT = 9\text{cm}$ . If area  
of  $\triangle NTL$ , area of  $\triangle NTM = 1:3$ , find LT  
and TM.



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**20.** IF the circumference of a circle is  $52.8\text{cm}$ , find its radius.



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**21.** If the perimeter of a semicircular plate is 36 cm, find its radius.



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**22.** The ratio of the circumference of two circles is 4:5. Find the ratio of their radii.



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**23.** If the radius of a circle is increased three times, by how many times will the circumference increase ?



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**24.** What length of rope is required, if 6 rounds of rope are needed to put around the fence of a circular track of radius 490 m.



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**25.** The minute hand of a clock is  $3.5\text{cm}$  long. What distance will its tip cover in 1 hour ?



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**26.** Find the area of a circular park with diameter 70 m.



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**27.** If the area of a circular field is  $1386 \text{ sq. m}$ , find its radius.



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**28.** If the ratio of the areas of two circles is 9:16, find the ratio of their radii.



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**29.** If the radius of a circle is 3 times that of another circle, find the ratio of their areas.



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**30.** If the area of a circular pond is  $49\pi$  sq. ft what will be the cost of erecting a 2 feet high wall around it at Rs 50 per feet ?



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**31.** IF the circumference of a circular plate is  $12\pi$  units, what would be its area ?



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**32.** A circular track is such that its inner circumference is 264 m. If the width of the track is 7m, find the cost of track at the rate of Rs 40 per m.



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**33.** A circular plot of land is of radius 49 m. A path  $3.5m$  wide needs to be paved around this plot. Find the cost of paving this path at the

rate of Rs 30 per sq. m



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## Exercise 17 3

1. Convert the as directed

44 sq. mm into sq. cm



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**2. Convert the as directed**

12 hectare into sq. m



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**3. Convert the as directed**

70 sq. cm into sq. m



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4. Convert the as directed

1000 sq. km into sq. m



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5. Convert the as directed

1000 sq. m into sq. cm



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6. Convert the as directed

110 sq. m into sq. km



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7. A rectangular 75 m by 60 m has a 1.5m wide path running around outside it. Find the cost of gravelling this path at the rate of Rs 8 per sq. m



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8. A smiley face of radius  $3.5\text{cm}$  is created by cutting out two circular eyes of radius  $0.35\text{cm}$  each. A triangular nose with base  $1.4\text{cm}$  and height  $1.2\text{cm}$ , and a semicircular mouth of radius  $0.7\text{cm}$ . Find the area of the cut-out face.



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9. A rectangular grassy plot measures  $90\text{ m}$  by  $65\text{ m}$ . Two pathways, each  $1.5\text{m}$  wide are running through the middle of the plot,

parallel to its length and breadth. Find the area of the grassy portion.



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**10.** Find the area of the shaded portion in the following



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**11.** A rectangle has length 40 cm and breadth 30 cm, it has an external isosceles triangle with equal sides of 17 cm each along one of its smaller sides as the base of the triangle. Find the pentagon thus formed.



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**12.** ABCD is a rectangle measuring 60 cm by 50 cm P,Q, and R are the points on AB, AD, and BC, respectively, such that

$AP = 40\text{cm}$ ,  $AQ = 20\text{cm}$ , and  $BR = 40\text{cm}$ .

Find the area of the polygon QPBCD.



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**13.** A rectangular field measures 25 m by 14 m.

Along the side measuring 14 m, a semicircular platform with the diameter along the side of the field is made. Find the area of the remaining field.



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**14.** A square garden measures 30 m by 30 m. Two flower beds in the shape of a quarter circles are made with two opposite vertices as centres. If the radius of each of the quarter circles is 7 m, find the portion of the garden with grass.



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**15.** A small card is in the shape of an isosceles triangle with a semicircle on its base. If the diameter of the semicircle is 6 cm, and the

height of the triangle is 3 cm, find the area of the card.



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**16.** Find the area of the given

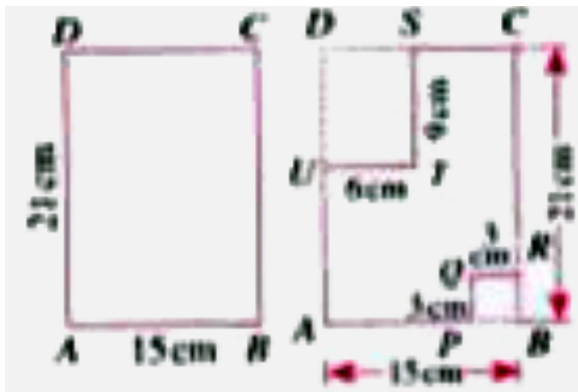


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**Revision Exercise**



1. ABCD is a rectangle as shown in the given  
 From corners B and D , rectangular portions  
 are cut off as shown in the Find the perimeter  
 and area of the original rectangle and also the  
 polygon obtained by cutting off portions from  
 corners B and D.



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2. Fill in the blank

$$9 \text{ sq. Cm} = \text{_____} \text{ sq. mm}$$



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3. Fill in the blank

$$12 \text{ sq. m} = \text{_____} \text{ sq. km}$$



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4. Fill in the blank

$$4 \text{ sq. m} = \text{_____} \text{ sq. cm}$$



**Watch Video Solution**

5. Fill in the blank

$$6 \text{ sq. mm} = \text{_____} \text{ sq. cm}$$



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6. Fill in the blank

$$10 \text{sq. cm} = \text{_____} \text{sq. m}$$



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7. In the given find the area of the shaded region. Also, find the shaded portion at the rate of Rs 12 per sq. m.



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8. Find the area of a rectangle whose perimeter is 110 m and whose length is 5 m less than twice its breadth.



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9. The area of a parallelogram is 90 sq. cm. If the base is 12 cm, find its height.



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10. PQRS is a parallelogram with  $PQ = 15\text{cm}$ ,  $ST = 10\text{cm}$ , and  $QV = 12\text{cm}$ .

Find PS.



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11. Find the area of a triangle with base 15 cm and height 8 cm.



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12. In the given triangle ABC, find the length of the base BC.



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13. ABCD is a quadrilateral with  $AE = 20\text{cm}$ ,  $CF = 36\text{cm}$ , and  $BD = 56\text{cm}$ .

Find the area of the quadrilateral ABCD.



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**14.** ABC is an isosceles triangle with  $AB = AC$  and  $BC = 16\text{cm}$  and perpendicular AD from A on BC = 6 cm. Find the area of the triangle ABC. Also find the length of the perpendicular from B on AC.



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**15.** The area of a circle is 1386 sq. cm, find its circumference.





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**16.** The inner circumference of a circular track is 440 m. The track is  $3.5m$  wide all around. Find the outer circumference and also the area of the track.



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**17.** Find the area of shaded regions in the following. Take  $\pi = 3.14$ .



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**18.** The length of a rectangle is 3m more than 5 times its breadth. Find the area of the rectangle if its perimeter is 90 m.



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**19.** PLOT is a rectangle with length 22 cm and breadth 16 cm. PO is a diagonal of this

rectangle. Find the area of the  $\triangle PLO$ .



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**20.** A rectangular scarf measures 90 cm by 80 cm. Two friends cut it across one of the diagonals and thus each has a triangular scarf. Find the area of each triangular scarf.



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21. LMNO is a parallelogram where OP is perpendicular to AB. If  $OM = 20\text{cm}$ ,  $LP = 9\text{cm}$ , and area of  $\Delta LPO = 54\text{sq. cm}$ , find the perimeter of LMNO.



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22. In  $\Delta ABC$ , perpendiculars AP and CQ are dropped from vertices A and C on opposite sides BC and AB, respectively. If

$AB = 10\text{cm}$ ,  $BC = 16\text{cm}$ ,  $AP = 8.8\text{cm}$ ,

find PQ .



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**23.** In  $\triangle AST$ , where  $TP \perp SA$ , area equals 204 sq. cm. Given that  $TP = 17\text{cm}$  and area of  $\triangle TSP$ : area of  $\triangle TAP = 3:5$ , find SP and PA.



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24. The radii of two circles are in the ratio 2:5. What is the ratio of their areas ?



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## Unit Practice Paper V

1. Calculate the area and perimeter of the shapes with different dimensions. Write your

answer in the given table.

Shape	Dimensions		Area	Perimeter
Square	a.	Side = 4 cm		
	b.	Side = 0.75 cm		
	c.	Side = 12.25 cm		
Rectangle	d.	Length = 4 mm, Width = 3 mm		
	e.	Length = 10 cm, Width = 15 cm		
	f.	Length = 12.5 cm, Width = 25 cm		



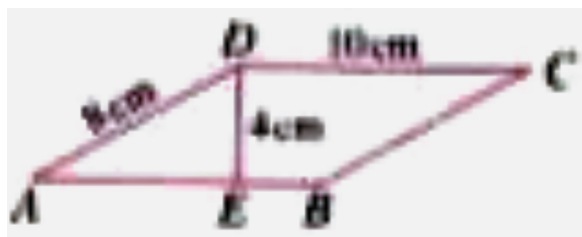
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2. Find the areas of the following triangles.



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3. Find the perimeter and area of the given parallelogram ABCD. Also, find the distance between AD and BC.



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4. The radius of the circular pipe is 13 cm. What length of a tape is required to wrap around the pipe once ?





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5. Reeta wants to fence the garden in front of her house on three sides. The dimensions of the three sides are 14 m, 12 m, and 19m. Find the cost of fencing the garden at the rate of Rs 110 per meter.



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6. The area of a square and a rectangle are equal. If the length and breadth of the

rectangle is 40 cm and 10 cm, respectively, find the side of the square. Also find the perimeter of the square.



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7. A circular hole of diameter 4 cm is cut out of a rectangular plate of dimension 10 cm by 8 cm. Find the area of the plate after the hole has been cut out.



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8. The given figure shows two circles with the same centre. The radius of the larger circle is 21 cm and the radius of the smaller circle is 7 cm. Find the a. area of the larger circle, b. area of the smaller circle, and c. shaded area between the two circles.



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9. Two crossroads, each of width 3 m, run at right angles through the centre of a

rectangular park of length 90 m and breadth 60 m and parallel to its sides. Find the area of the roads. Also find the cost of constructing the roads at the rate of Rs 120 per  $m^2$ .



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**10.** Deepak took a wire of length 176 cm and bent it into the shape of a circle. Find the radius of that circle. Also, find its area. If the same wire is bent into the shape of a rectangle of length 7 cm, what will be the breadth of the

rectangle ? Which encloses more area, the circle or the rectangle ?



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**Try This**

1. ABCD is a square with sides 12 cm each. Find its perimeter and area. Cut off a rectangle measuring 8 cm by 4 cm from a corner as shown in the figure. Find the perimeter and area of the new polygon thus formed.



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2. The wall of a room is 16 m long and 6 m high.

There is a long rectangular window in the wall measuring 3 m long and 1 m high. Find the cost of painting the wall at the rate of Rs 15 per sq. m.



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3. Rahul jogs around a square park every morning. If the side of the square park is 300

m, how many rounds around the park does he need to take if he wants to jog 6 km?



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4. The perimeter of a square and a rectangle are equal. If the square is of side 14 cm and the length of the rectangle is 16cm, find its breadth.



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5. Find the area of a rectangle whose length is 5 m more than 4 times its breadth, and its perimeter is 60cm.



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6. How many squares of side 1 mm are required to form a square of side 1 cm?



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7. How many square tiles of side 20cm are required to cover the floor of a square room of side 4m?



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8. The area of a rectangular room is 40 sq. m.  
Express the area of the room in sq. km.



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**9.** A rectangle measures 27 cm by 16 cm. One diagonal divides the rectangle into two triangles. Find the area of each triangle.



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**10.** The area of a parallelogram is 202.5 sq.cm. If one of its side is 15 cm, find the corresponding height.



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**11.** PQRS is a parallelogram. RA and RB are perpendiculars from R on PQ and PS, respectively. If  $RA = 15$  cm,  $RB = 22$  cm, and  $QR = 26$  cm, find PQ.



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**12.** The area of a parallelogram is 243 sq.cm and its height is one-third of its base. Find the base.



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**13.** The area of a triangle is 192 sq.cm and its height is 12 cm. Find its base.



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**14.** The area of a right-angled triangle is 54 sq. cm. If one of the two perpendicular sides is 9 cm, find the other.



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**15.** Find the area of an isosceles triangle which has base 12 cm and equal sides are 10 cm each.



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**16.** PQRS is a parallelogram with ST perpendicular to PQ. Given area of  $\Delta$  PST = 54 sq.cm, QS = 13 cm, and TQ = 5 cm, find the perimeter of the parallelogram.



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**17.** A quadrilateral has a diagonal of 26 cm. The lengths of perpendiculars on this diagonal from opposite vertices is 13 cm and 7 cm. Find the area of this quadrilateral.



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**18.** ABCD is a parallelogram. Find the ratio of the area of  $\triangle ABC$  to the area of the parallelogram ABCD.



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**19.** In  $\Delta ABC$ ,  $BP$  and  $CQ$  are perpendiculars from  $B$  and  $C$  to the opposite sides. If  $AB = 16$  cm,  $AC = 24$  cm, and  $CQ = 20.4$  cm, find  $BP$ .



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**20.** In  $\Delta PQR$ ,  $PS \perp QR$ .  $PS = 11$  cm and area of  $\Delta PQR = 77$  sq. cm. If area of  $\Delta PSQ$ : area of  $\Delta PSR = 3:4$ , find  $QS$  and  $SR$ .



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21. Find the circumference of a circle of diameter 21 cm. Take  $\pi = \frac{22}{7}$ .



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22. The ratio of the radii of two circles is 2:3. Find the ratio of their circumference.



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**23.** A road roller has wheels of radius 70 cm. It has to work on an 88 km road. How many revolutions of the wheel will be required for the road roller to cover the entire length of the road once? Take  $\pi = \frac{22}{7}$ .



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**24.** A semicircular disc has a radius of 21 cm. Find its perimeter.



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**25.** An increase in the radius of a circle results in an increase of  $6\frac{2}{7}$  cm in the circumference.

Find the increase in the radius.



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**26.** Find the area of a circular plate of radius 1.4 m.



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27. If the ratio of the radii of two circles is 2:3, find the ratio of their areas.



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28. A circular racing track is such that its outer circumference measures 440 m and its inner circumference is 396 m. Find the width of the track.

A.  $10m$

B.  $9m$

C.  $8m$

D.  $7m$

**Answer: D**



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**29.** Convert the as direct.

7 sq. Cm into sq. nm



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**30.** Convert the as direct.

0.5 sq. cm into sq. mm



**Watch Video Solution**

**31.** Convert the as direct.

2.5 sq. cm into sq. mm



**Watch Video Solution**

**32.** Convert the as direct.

5000 sq. mm into sq. cm



**Watch Video Solution**

**33.** Convert the as direct.

6.5 sq. m into sq. cm



**Watch Video Solution**

**34.** Convert the as direct.

0.005 sq. m into sq. cm



**Watch Video Solution**

**35.** Convert the as direct.

10 sq. km into sq. m



**Watch Video Solution**

**36.** Convert the as direct.

50000 sq. m into sq. km



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**37.** A rectangular garden is 124m long and 92 m wide. Find the cost of making a 3-m wide path around it at the rate of Rs 160 per sq. m

.



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**38.** Find the area of the shaded region.



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**39.** A rectangle is 36 m long and 24 cm wide. From one of its smaller sides, an isosceles triangle



With base 24 cm and the two equal sides 15 cm each is cut off. Find the area of the remaining portion.



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**40.** The smaller side of a rectangular window 28 cm by 50 cm is surmounted by a semicircular window. Find the area of the window thus formed.



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**41.** A circle is of diameter 12 cm. Two circles of diameters 4 cm and 8 cm, respectively, are drawn inside this circle with the centres on one of the diameters of the bigger circle. Find the area of the remaining region of the bigger circle . Take  $\pi = 3.14$ .



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