MATHS

BOOKS - RS AGGARWAL MATHS (HINGLISH)

MENSURATION

Solved Examples

1. The length and breadth of a rectangular field are 120 mand 75 m respectively,

Find (i) the area of the field and the cost of turfing it at 15 per m^2

(ii) the perimeter of the field and the cost of fencing it at Rs. 40 per m.

2. The length and breadth of a rectangular field are in the ratio $3:2$. If the area of the field is $3456m^2$ .Find the cost of fencing it at Rs. 60 per m.

A. Rs. 4400

B. Rs. 10000

C. Rs. 14000

D. Rs. 14400

Answer: D

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3. Find the area of a rectangular plot, one side of which measures $35m$ and the diagonal is $37m$.

A. $820m^2$

B. $420m^2$

C. $920m^2$

D. $480m^2$

Answer: B

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4. Find the area of a square, the length of whose diagonal is $8\sqrt{2}$ m.

A. 7 m

B. 8 m

C. 9 m

D. 6 m

Answer: B

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5. The cost of fencing a square field at Rs.16 per metre is Rs.32000.Find the cost of reaping the field at Rs.35 per $100m^2$.

A. Rs. 97500

B. Rs. 86500

C. Rs. 87500

D. Rs. 77500

Answer: C

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6. The area of a square ABCD is $36cm^2$. Find the area of the square obtained by joining the midpoints of the sides of the square ABCD.

A. $17\ cm^2$

B. $18\ cm^2$

C. $28\ cm^2$

D. $10\ cm^2$

Answer: B

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7. A room is 9 m long, 8 m broad and 6.5 m high. It has one door of dimensions $(2m \times 1.5m)$ and four windows each of

dimensions $(1.5m \times 1m)$. Find the cost of whitewashing the walls at Rs. 25 per m^2.

8. A room is 7 m long and 5 m broad. It has one door measuring (2 m by 1.5 m) and two windows, each measuring (1.5 m byl m). The cost of painting the walls of the room at Rs. 80 per m^2 is Rs. 5280. Find the height of the room.

9. A rectangular grassy plot is 112 m long and 78 m broad. It has a 2.5-m-wide gravel path all around it on the inside. Find the area of the path and the cost of constructing it atRs. 120 per m^2.

**10.** A rectangular park is 45 m long and 30 m wide. A path 2.5 m wide is constructed outside

the park. Find the area of the path and the cost of constructing it atRs. 125 per m^2.

11. A rectangular lawn is 60 m by 40 m and has two roads. each 5 m wide running in the middle of it, one parallel to its length and the other parallel to the breadth, as shown in the figure. Find the cost of constructing the roads

at Rs. 80 per m^2.
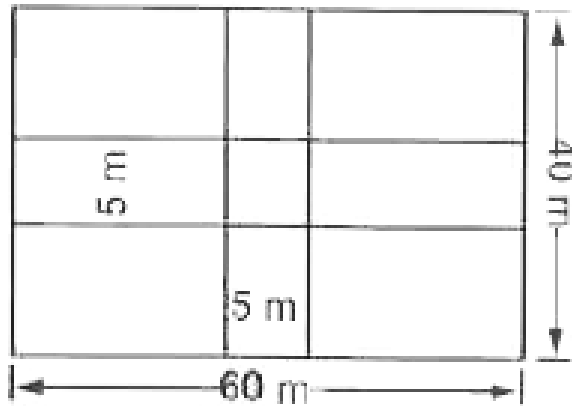
12. A room 5 m long and 4 m wide is surrounded by a verandah. If the verandah occupies an area of $22m^2$, find the width of

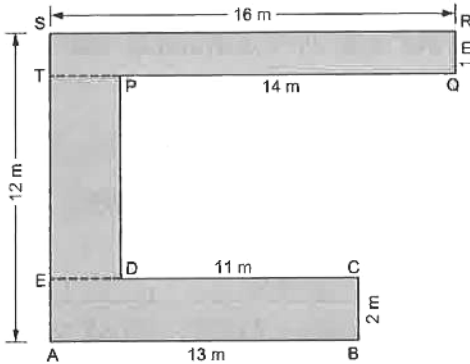the verandah. Let ABCD be the room surrounded by a verandah.

13. A square lawn has a 2-m-wide path surrounding it. If the area of the path is 136 m,find the area of the lawn.

14. Calculate the area of the shaded region in the figure given below.

15. One side of a parallelogram is 14 cm. Its distance from the opposite side is 16.5 cm. Find the area of the parallelogram

A. $331cm^2$

B. $223cm^2$

C. $231cm^2$

D. $241cm^2$

Answer: C

16. The base of a parallelogram is twice its height. If its area is $512cm^2$, find the height.

A. 10 cm

B. 12 cm

C. 8 cm

D. 16 cm

Answer: D

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17. Find the area of a rhombus in the lengths

of whose diagonals are 36 cm and 22.5cm.

18. Find the area of a rhombus in which each side is 15 cm long and one of whose diagonals is 24

A. $211 cm^2$

B. $216 cm^2$

C. $218 cm^2$

D. $217 cm^2$

Answer: B

19. If the area of a rhombus is $96cm^2$ and one of its diagonals is 16 cm, find its perimeter

    A. 70cm

    B. 40cm

    C. 50cm

    D. 60cm

Answer: B

20. Find the area of a triangle in which base = 25 cm and height = 14 cm.

A. $165 \ cm^2$

B. $175 \ cm^2$

C. $185 \ cm^2$

D. $105 \ cm^2$

Answer: B

21. The base of a triangular field is three times its height. If the cost of cultivating the field at Rs. 2800 per hectare is Rs.37800. find its base and height.

    A. 900, 300

    B. 200, 100

    C. 500, 400

    D. 800, 500

Answer: A

22. Find the height of a triangle whose base is 15 cm and area $120 cm^2$

    A. 32 cm

    B. 16 cm

    C. 26 cm

    D. 28 cm

Answer: B

23. The area of a right triangle is $40cm^2$. If one of its legs measures 8 cm, find the length of the other leg.

  A. 6 cm

  B. 8 cm

  C. 10 cm

  D. 16 cm

Answer: C

24. Find the area of $\triangle ABC$ in which $\angle B = 90°$, BC = 8 cm and AC=10 cm. If $BD \perp AC$, then find BD.

A. 4. 8 cm

B. 8. 4 cm

C. 3.7 cm

D. none of these

Answer: A

25. Find the area of an equilateral triangle each of whose sides is 10 cm. $\left[Take\sqrt{3} = 1.73\right]$.

26. Find the area of a triangular field whose sides are 78 m, 50 m and 112 m.

27. Find the area of an isosceles $\triangle ABC$ in which BC = 8 cm and AB = AC = 5 cm. If $CE \perp AB$, find CE.

28. A diagonal of a quadrilateral is 30 cm in length and the lengths of perpendiculars to it from the opposite vertices are 6.8 cm and 9.6 cm. Find the area of the quadrilateral.

29. Find the circumference of a circle of radius

10.5 cm.

A. 68 cm

B. 66 cm

C. 64 cm

D. 62 cm

Answer: B

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30. Find the circumference of a circle of radius 10 cm. $(Take \pi = 3.14.]$

A. $72.8cm$

B. $62.8cm$

C. $82.8cm$

D. $92.8cm$

Answer: B

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31. Find the diameter of a circle whose circumference is 26.4 cm.

A. 8.4 cm

B. 4.8 cm

C. 8 cm

D. 6 cm

Answer: A

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32. The circumference of a circle exceeds its diameter by 18 cm. Find the radius of the circle.

33. The ratio of radii of two circles is 3:4. Find the ratio of their circumferences.

A. 1 : 2

B. 4 : 3

C. 3 : 4

D. 2 : 1

Answer: C

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34. The diameter of a wheel of a car is 63 cm. Find the distance travelled by the car during the period in which the wheel makes 1000 revolutions.

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35. The diameter of the wheel of a car is 70 cm. How many revolutions will it make to travel 99 km?

A. 43, 000

B. 42, 000

C. 45, 000

D. 40, 000

Answer: C

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36. A racetrack is in the form of a ring whose inner circumference is 264 m and the outer circumference is 308 m. Find the width of the track.

37. The inner circumference of a circular track is 220 m and the width of the track is 7 m. Calculate the cost of putting up a fence along

the outer circle of the track at the rate of Rs. 50 per m.

A. 24, 200

B. 23, 200

C. 13, 200

D. 18, 200

Answer: C

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38. (i) Find the area of a circle of radius 21 cm.

$$\left[Take\pi = \frac{22}{7} \right]$$

(ii) Find the area of a circle of radius 10 cm.

$$[Take\pi = 3.14]$$

39. The circumference of a circle is 88 cm. Find its area.

A. $610cm^2$

B. $612 cm^2$

C. $616 cm^2$

D. $614 cm^2$

Answer: C

40. The area of a circular tin plate is $38.5 m^2$.

Find its circumference.

A. 11 m

B. 22 m

C. 24 m

D. 41 m

Answer: B

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41. A copper wire when bent in the form of a square encloses an area of $121cm^2$. Y the same wire is bent in the form of a circle, find the area enclosed by it.

A. $184cm^2$

B. $164cm^2$

C. $154cm^2$

D. $174cm^2$

Answer: C

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42. The circumferences of two circles are in the

ratio 3:4. Find the ratio of their areas.

A. $9 : 16$

B. $16 : 9$

C. $6 : 9$

D. $9 : 6$

Answer: A

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43. The areas of two circles are in the ratio 25:36. Find the ratio of their circumferences.

A. $6:5$

B. $5:6$

C. $7:6$

D. $6:7$

Answer: B

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44. The diameter of a circular park is 84 m. A 3.5-m-wide road runs on the outside around it.
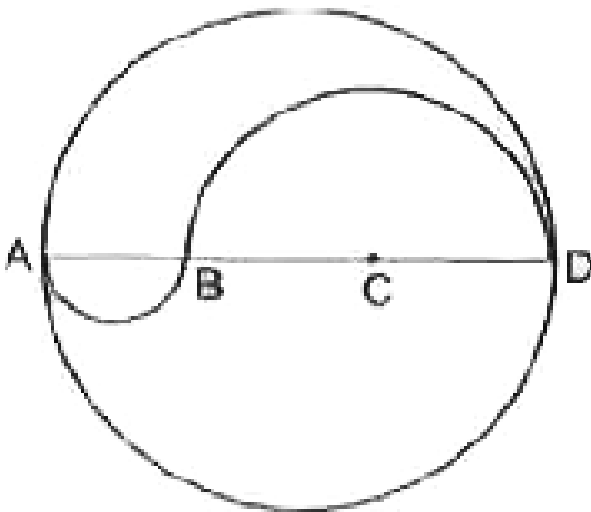
Find the cost of constructing the road at Rs. 200 per m^2.

45. Each side of a square park is 80 m. At each corner of the park there is a flower bed in the form of a quadrant of a circle of radius 14 m, as shown in the figure. Find the area of the remaining part of the park.

46. ABCD is a diameter of a circle of radius 6 cm such that AB = BC = CD. Semicircles are drawn on AB and BD as diameters, as shown in the given figure. Find the area of the shaded region.

Exercise 20 A

1. Find the area of the rectangle whose dimensions are:(i) length = 24.5 m, breadth = 18 m (ii) length = 12.5 m, breadth = 8 dm.

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2. Find the area of a rectangular plot, one side of which is 48 m and its diagonal is 50 m.

A. $372 m^2$

B. $472 m^2$

C. $572 m^2$

D. $672 m^2$

Answer: D

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3. The sides of a rectangular park are in the ratio 4:3. If its area is 1728 m. find the cost of fencing it at Rs.30 per metre.

A. Rs 5540

B. Rs 5000

C. Rs 5040

D. none of these

Answer: C

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4. The area of a rectangular field is $3584m^2$

and its length is 64 m. A boy runs around the

field at the rate of 6 km//h. How long will he take to go 5 times around it?

5. A verandah is 40 m long and 15 m broad. It is to be paved with stones, each measuring 6 dm by 5 dm. Find the number of stones required.

6. Find the cost of carpeting a room 13 m by 9 m with a carpet of width 75 cm at the rate of Rs.105 per metre.

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7. The cost of carpeting a room 15 m long with a carpet of width 75 cm at Rs.80 per metre is Rs.19200. Find the width of the room.

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8. The length and breadth of a rectangular piece of land are in the ratio of 5:3. If the total cost of fencing it at rs. 24 per metre is Rs.9600, find its length and breadth

9. Find the length of the largest pole that can be placed in a hall 10 m long, 10 m wide and 5 m high.[Hint. Length of the diagonal of the room $=\sqrt{l^2 + b^2 + h^2}$].

10. Find the area of a square each of whose sides measures 8.5 m.

A. $92.25m^2$

B. $82.25m^2$

C. $72.25m^2$

D. $74.25m^2$

Answer: C

11. Find the area of the square, the length of whose diagonal is(i) 72 cm, (ii) 2.4 m.

12. The area of a square is $16200m^2$. Find the length of its diagonal.

A. 170m

B. 180m

C. 160m

D. 280m

Answer: B

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13. The area of a square field is $\dfrac{1}{2}$ hectare. Find the length of its diagonal in metres.

[Hint. 1 hectare = $10000m^2$]

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14. The area of a square plot is 6084 m sq.. Find the length of the wire which can go four times along the boundary of the plot.

A. 1258m

B. 1248m

C. 1348m

D. 1448m

Answer: B

15. A wire is in the shape of a square of side 10 cm. If the wire is rebent into a rectangle of length 12 cm, find its breadth. Which figure encloses more area and by how much?

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16. A godown is 50 m long, 40 m broad and 10 m high. Find the cost of whitewashing its four walls and ceiling at Rs.20 per square metre.

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17. The area of the 4 walls of a room is $168m^2$. The breadth and height of the room are 10 m and 4 m respectively. Find the length of the room.

18. The area of the 4 walls of a room is $77m^2$. The length and breadth of the room are 7.5 m and 3.5 m respectively. Find the height of the room.

19. The area of four walls of a room is $120m^2$.

If the length of the room is twice its breadth

and the height is 4 m, find the area of the

floor.

20. A room is 8.5 m long, 6.5 m broad and 3.4

m high. It has two doors, each measuring (1.5

m by 1 m) and two windows, each measuring (2 m by 1 m). Find the cost of painting its four walls at 160 per m^2.

Exercise 20 B

1. A rectangular grassy plot is 75 m long and 60 m broad. It has a path of width 2 m all around it on the inside. Find the area of the

path and the cost of constructing it atRs. 125 per m^2

2. A rectangular plot of land measures 95 m by 72 m. Inside the plot, a path of uniform width of 3.5 m is to be constructed all around. The rest of the plot is to be laid with grass. Find the total expenses involved in constructing the path at Rs.80 per m and laying the grass at Rs.40 per m^2.

3. A saree is 5 m long and 1.3 m wide. A border of width 25 cm is printed along its sides. Find the cost of printing the border at Rs.1 per $10cm^2$.

4. A rectangular grassy lawn measuring 38 m by 25 m has been surrounded externally by a 2.5-m-wide path. Calculate the cost of

gravelling the path at the rate of Rs.120 per m^2

5. A room 9.5 m long and 6 m wide is surrounded by a 1.25-m-wide verandah. Calculate the cost of cementing the floor of this verandah atRs. 80 per m^2.

6. Each side of a square flower bed is 2 m 80 cm long. It is extended by digging a strip 30 cm wide all around it. Find the area of the enlarged flower bed and also the increase in the area of the flower bed.

7. The length and breadth of a park are in the ratio 2:1 and its perimeter is 240 m. A path 2 m

wide runs inside it, along its boundary. Find the cost of paving the path at Rs.80 per m^2.

8. A school has a hall which is 22 m long and 15.5 m broad. A carpet is laid inside the hall leaving all around a margin of 75 cm from the walls. Find the area of the carpet and the area of the strip left uncovered. If the width of the carpet is 82 cm, find its cost at the rate of rs.60 per m.

9. A square lawn is surrounded by a path 2.5 m wide. If the area of the path is $165m^2$ find the area of the lawn.

10. The length and breadth of a rectangular park are in the ratio $5:2$. A 2.5 m wide path running all around the outside the park has an area $305m^2$. Find the dimensions of the park.

11. A rectangular lawn 70 m by 50 m has two roads, each 5 m wide, running through its middle, one parallel to its length and the other parallel to its breadth. Find the cost of constructing the roads at Rs.120 per m^2.

12. A 115-m-long and 64-m-broad lawn has two roads at right angles, one 2 m wide, running parallel to its length, and the other 2.5 m wide, running parallel to its breadth. Find the cost of gravelling the roads at Rs.60 per m^2.
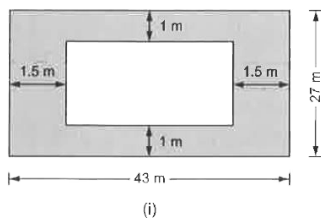
13. A rectangular field is 50 m by 40 m. It has two roads through its centre, running parallel toits sides. The width of the longer and the

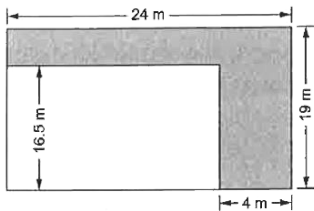shorter roads are 2 m and 2.5-m-respectivelyFind the area of the roads and the area of the remaining portion of the field.

14. Calculate the area of the shaded region in each of the figures given below:

(i)

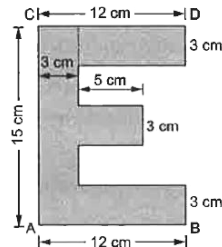(ii)
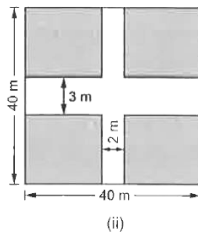
15. Calculate the area of the shaded region in each of the figures given below. Fig (11) has a uniform width of 3 cm and it is given that AB=CD.
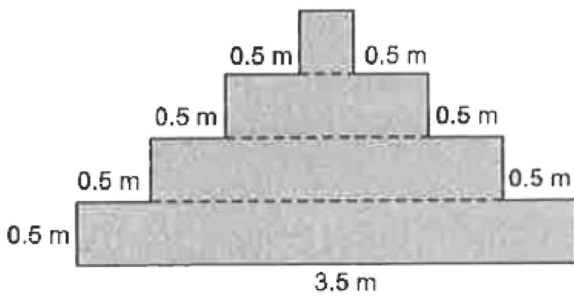

(i)

(ii)

16. In the given figure, all steps are 0.5 m high. Find the area of the shaded region.

0.5 m   0.5 m

0.5 m   0.5 m

0.5 m   0.5 m

0.5 m

3.5 m

Exercise 20 C

1. Find the area of a parallelogram with base 32 cm and height 16.5 cm.

2. The base of a parallelogram measures 1 m 60 cm and its height is 75 cm. Find its area in m^2 .

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3. In a parallelogram it is being given that base = 14 dm and height 6.5 dm. Find its area in(i) cm^2 . (ii) m^2 .

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4. Find the height of a parallelogram whose area is $54cm^2$ and the base is 15 cm.

A. 6.6cm

B. 3.6cm

C. 5.6cm

D. 4.6cm

Answer: B

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5. One side of a parallelogram is 18 cm long and its area is $153cm^2$. Find the distance of the given side from its opposite side.
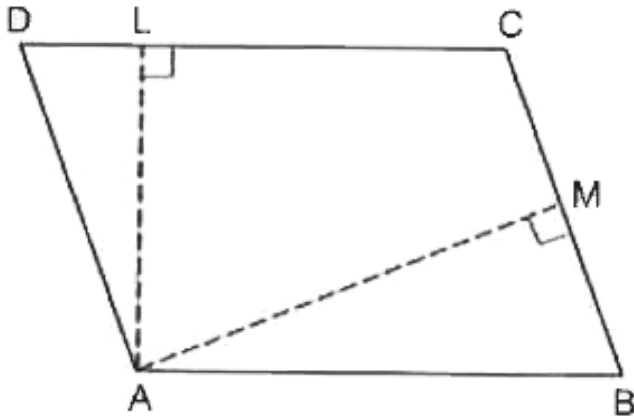
    A. 6.5cm

    B. 7.5cm

    C. 8.5cm

    D. 9.5cm

Answer: C

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6. In a parallelogram ABCD, AB = 18 cm, BC = 12 cm, $AL \perp DC$ and $AM \perp BC$. If AL = 6.4 cm, find the length of AM

7. The adjacent sides of a parallelogram are 15 cm and 8 cm. If the distance between thelonger sides is 4 cm, find the distance between the shorter sides.

8. The height of a parallelogram is one-third of its base. If the area of the parallelogram is $108cm^2$, find its base and height.

9. The base of a parallelogram is twice its height. If the area of the parallelogram is $512 cm^2$, find the base and the height.

10. Find the area of a rhombus in which

Q(i) each side = 12 cm and height = 7.5 cm,

(ii) each side = 2 dm and height = 12.6 cm.

11. Find the area of a rhombus in which

Q(i) each side = 2 dm and height = 12.6 cm.

(ii) 8 dm 5 cm and 5 dm 6 cm.

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12. Find the area of a rhombus each side of which measures 20 cm and one of whose diagonal is 24 cm

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13. The area of a rhombus is $148.8cm^2$. If one of its diagonals is 19.2 cm, find the length of the other diagonal.

14. The area of a rhombus is $119cm^2$ and its perimeter is 56 cm. Find its height.

    A. 10.5cm

    B. 9.5cm

    C. 8.5cm

D. 7.5cm

Answer: C

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15. The area of a rhombus is $441cm^2$ and its height is 17.5 cm. Find the length of each side of the rhombus.

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16. The area of a rhombus is equal to the area of a triangle having base 24.8 cm and the corresponding height 16.5 cm. If one of the diagonals of the rhombus is 22 cm, find the length of the other diagonal.

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Exercise 20 D

1. Find the area of the triangle in which

Q(i) base = 42 cm and height = 25 cm

(ii) base = 16.8 m and height = 75 cm

(iii) base = 8 dm and height = 35 cm.

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2. Find the height of a triangle having an area of $72cm^2$ and base 16 cm.

    A. 7cm

    B. 8cm

C. 9cm

D. 4cm

Answer: C

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3. Find the height of a triangular region having an area of $224m^2$ and base 28 m.

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4. Find the base of a triangle whose area is $90cm^2$ and height 12 cm.

5. The base of a triangular field is three times its height. If the cost of cultivating the field at Rs.1080 per hectare is Rs.14580, find its base and height.

6. The area of right triangular region is $129.5 cm^2$. If one of the sides containing the right angle is 14.8 cm, find the other one.

7. Find the area of a right triangle whose base is 1.2 m and hypotenuse 3.7 m.

8. The legs of a right triangle are in the ratio 3 : 4 and its area is $1014 cm^2$. Find the lengths of its legs.

9. One side of a right-angled triangular scarf is 80 cm and its longest side is 1 m. Find its cost at the rate of Rs.250 per m^2.

10. Find the area of an equilateral triangle each of whose sides measures (1) 18 cm, (11) 20 cm. $\left[Take\sqrt{3} = 1.73\right]$

11. The area of an equilateral triangle is $\left(16 \times \sqrt{3}\right)cm^2$. Find the length of each side of the triangle.

12. Find the length of the height of an equilateral triangle of side 24 cm. $\left[Take\sqrt{3} = 1.73\right]$

13. Find the area of the triangle in which

Q(i) a = 13 m, b=14 m, c=15 m,

(ii) a = 52 cm, b = 56 cm, c = 60 cm,

(iii) a = 91 m, b=98 m. c = 105 m.

14. The lengths of the sides of a triangle are 33 cm, 44 cm and 55 cm respectively. Find the area of the triangle and hence find the height corresponding to the side measuring 44 cm.

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15. The sides of a triangle are in the ratio 13:14: 15 and its perimeter is 84 cm. Find the area of the triangle.

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16. The sides of a triangle are 42 cm, 34 cm and 20 cm. Calculate its area and the length of the height on the longest side.

17. The base of an isosceles triangle is 48 cm and one of its equal sides is 30 cm. Find the area of the triangle

**18.** The base of an isosceles triangle is 12 cm and its perimeter is 32 cm. Find its area.

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19. A diagonal of a quadrilateral is 26 cm and the perpendiculars drawn to it from the opposite vertices are 12.8 cm and 11.2 cm. Find the area of the quadrilateral.

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20. In a quadrilateral ABCD, AB = 28 cm, BC = 26 cm, CD = 50 cm, DA = 40 cm and diagonal AC = 30 cm. Find the area of the quadrilateral.
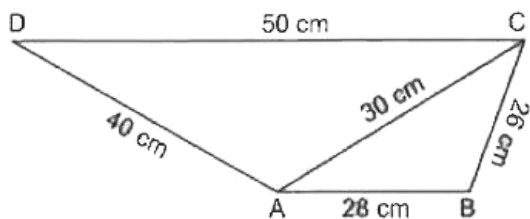
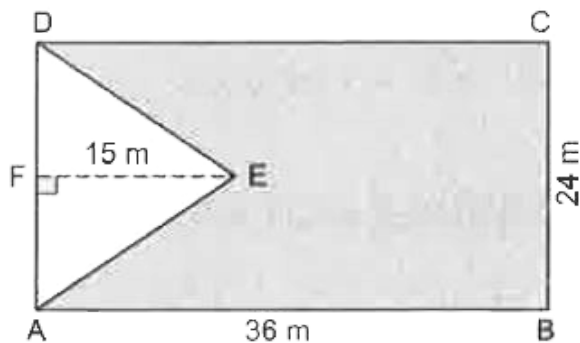**21.** In the given figure, ABCD is a rectangle with length = 36 m and breadth = 24 m. In $\triangle ADE$, $EF \perp AD$ and EF = 15 m. Calculate the area of
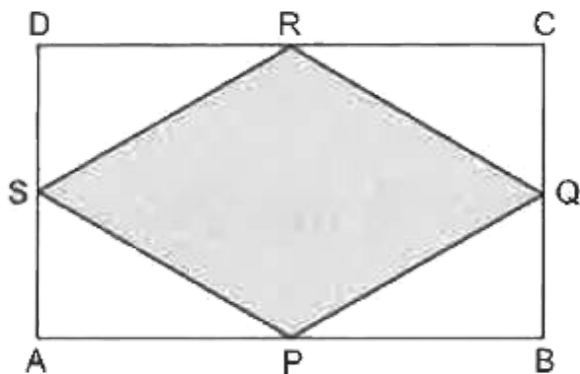
the   shaded   region

D ... C

F — 15 m — > E

24 m

A ... 36 m ... B

22. In the given figure, ABCD is a rectangle in which AB = 40 cm and BC = 25 cm. If P. Q, R, S be the midpoints of AB, BC, CD and DA
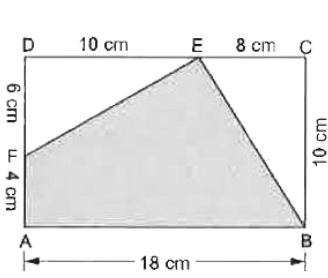
respectively, find the area of the shaded

region.
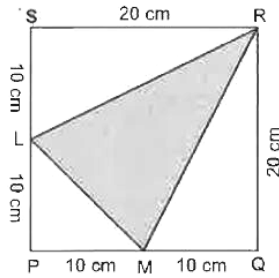
23. In the following figures, find the area of the

shaded   region.
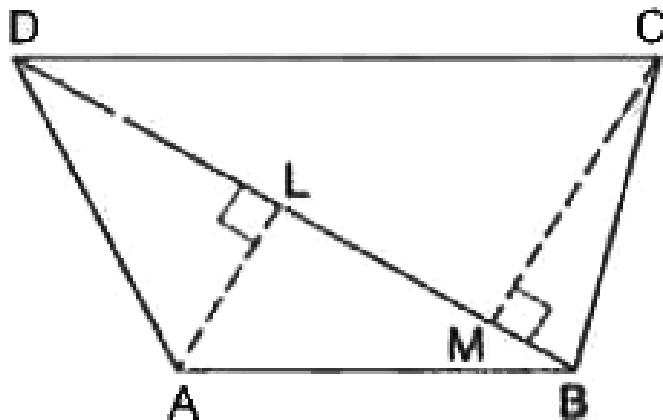
(i)

(ii)

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24. Find the area of quadrilateral ABCD in which diagonal BD = 24 cm. $AL \perp BD$ and

$CM \perp BD$.such that AL = 5 cm and CM = 8

cm.

Exercise 20 E

1. Find the circumference of a circle whose

radius is

(i) 28 cm

(ii) 1.4 m.

2. Find the circumference of a circle whose

diameter is

Q(i) 35 cm

(ii) 4.9 m.

3. Find the circumference of a circle of radius 15 cm.

$[Take\pi = 3.14.]$

4. Find the radius of a circle whose circumference is 57.2 cm.

A. $5.1cm$

B. $6.1cm$

C. $9.1 cm$

D. $8.1 cm$

Answer: C

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5. Find the diameter of a circle whose circumference is 63.8 m.

A. 23.3m

B. 20.3m

C. 21.3m

D. 22.3m

Answer: B

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6. The circumference of a circle exceeds its diameter by 30 cm. Find the radius of the circle.

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7. The ratio of the radii of two circles is 5:3. Find the ratio of their circumferences,

8. How long will a man take to make a round of a circular field of radius 21 m, cycling at the speed of $8km/h$?

9. A racetrack is in the form of a ring whose inner circumference is 528 m and the outer circumference is 616 m. Find the width of the track.

10. The inner circumference of a circular track is 330 m. The track is 10.5 m wide everywhere. Calculate the cost of putting up a fence along the outer circle at the rate of Rs.20 per metre.

11. One circle has a radius of 98 cm and a second concentric circle has a radius of 1 m 26 cm.How much longer is the circumference of the second circle than that of the first?

12. A piece of wire is bent in the shape of an equilateral triangle each of whose sides

measures8 cm. This wire is rebent to form a circular ring. What is the diameter of the ring?

13. A rhombus has the same perimeter as the circumference of a circle. If each side of the rhombus measures 33 cm, find the radius of the circle.

14. A wire in the form of a rectangle 18.7 cm long and 14.3 cm wide is reshaped and bent into the form of a circle. Find the radius of the circle so formed.

15. A wire is looped in the form of a circle of radius 35 cm. If it is rebent in the form of a square,what will be the length of each side of the square?

16. A well of diameter 140 cm has a stone parapet around it. If the length of the outer edge of the parapet is 616 cm, find the width of the parapet.

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17. Find the distance covered by the wheel of a bus in 2000 rotations if the diameter of thewheel is 98 cm.

18. The diameter of the wheel of a cycle is 70 cm. How far will it go in 250 revolutions?

19. The diameter of the wheel of a car is 77 cm. How many revolutions will it make to travel121 km?

20. A bicycle wheel makes 5000 revolutions in moving 11 km. Find the circumference and the diameter of the wheel.

21. The hour and minute hands of a clock are 4.2 cm and 7 cm long respectively. Find the sum of the distances covered by their tips in 1 day.

1. Find the area of a circle whose radius is

Q(i) 21 cm.

(ii)3.5m

2. Find the area of a circle whose diameter is

Q(i) 28 cm.

(ii)1.4 m.

3. The circumference of a circle is 264 cm. Find its area.

4. The circumference of a circle is 35.2 m. Find its area.

5. The area of a circle is $616 cm^2$. Find its circumference

6. The area of a circle is $1386 m^2$. Find its circumference.

7. The ratio of the radius of two circles is 4:5.

Find the ratio of their areas.

8. A horse is tied to a pole in a park with a string 21 m long. Find the area over which the horse can graze.

A. $1286m^2$

B. $1586m^2$

C. $1386m^2$

D. $1486m^2$

Answer: C

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9. A steel wire when bent in the form of a square encloses an area of $100 \, cm^2$. If the same wire is bent in the form of a circle, find the area of the circle.

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10. A wire is in a circular shape of radius 28 cm. If it is bent in the form of a square, what will bethe area of the square formed?
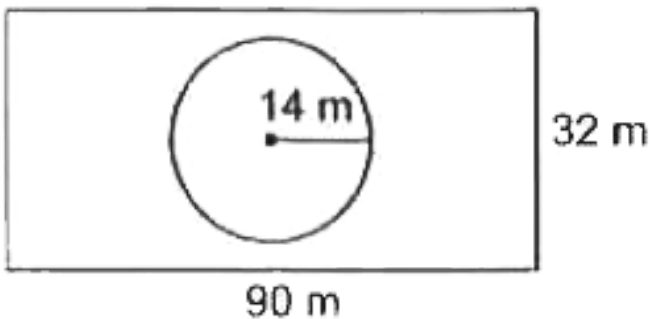
11. A rectangular sheet of acrylic is 34 cm by 24 cm. From it, 64 circular buttons, each ofdiameter 3.5 cm, have been cut out. Find the area of the remaining sheet.

12. A rectangular ground is 90 m long and 32 m broad. In the middle of the ground there is a circular tank of radius 14 metres. Find the cost of turfing the remaining portion at the rate of Rs. 50 per square metre.
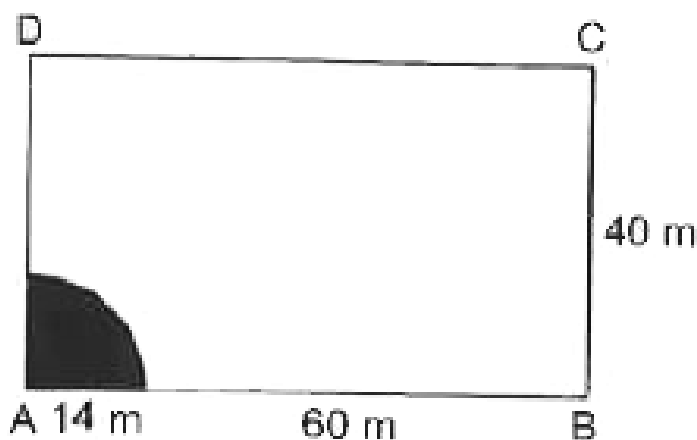

14 m
32 m
90 m

13. In the given figure, four equal circles are described about corners of a square so that each circle touches two of the circles as shown in the figure. Find the area of the shaded region, each side of the square measuring 14 cm.
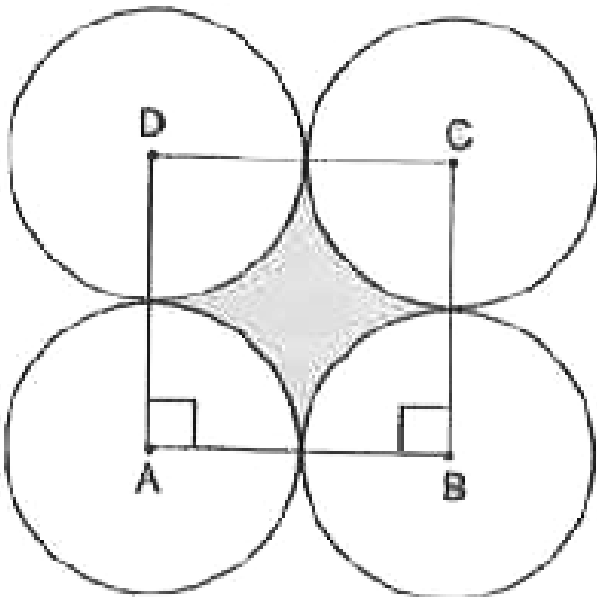
14. A horse is tethered to one corner of a rectangular field, 60 m by 40 m, by a rope 14 m long. On how much area can the horse graze?

15. In the given figure, a circle of diameter 21 cm is given. Inside this circle, two circles with diameters $\frac{2}{3}$ and $\frac{1}{3}$ of the diameter of the big circle have been drawn, as shown in the given figure. Find the area of the shaded region.
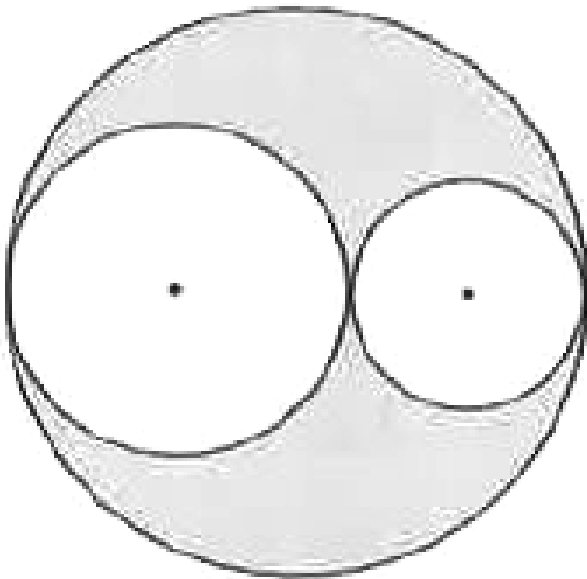
16. In each of the corners, there is a flower bed in the form of a quadrant of a circle of radius 2 m. Also, there is a flower bed in the form of a circle of radius 2 m in the middle of the plot. Find the area of the remaining plot.
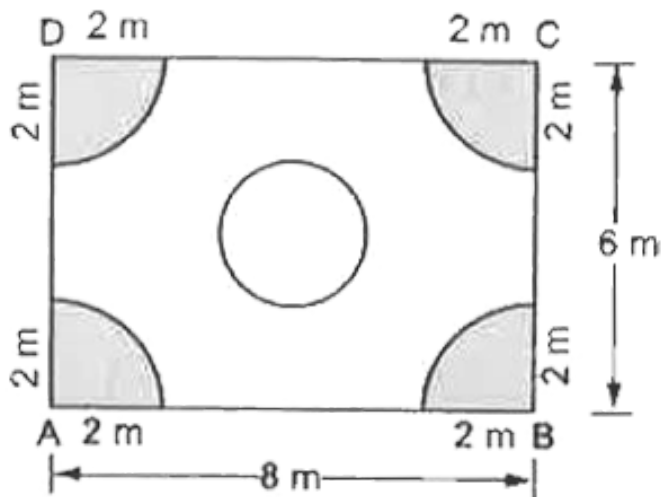
1. The length of a rectangle is 16 cm and the length of its diagonal is 20 cm. The area of the rectangle is

    A. $320 cm^2$

    B. $160 cm^2$

    C. $192 cm^2$

    D. $156 cm^2$

Answer: C

2. Each diagonal of a square is 12 cm long. Its area is

A. $144cm^2$

B. $72cm^2$

C. $36cm^2$

D. none of these

Answer: B

3. The area of a square is $200cm^2$. The length

of its diagonal is

    A. 10cm

    B. 20cm

    C. $10\sqrt{2}cm$

    D. 14.1cm

Answer: B

4. The area of a square field is 0.5 hectare. The length of its diagonal is

A. 100m

B. 50m

C. 250m

D. $50\sqrt{2}m$

Answer: A

5. The length of a rectangular field is thrice its breadth and its perimeter is 240 m. The length of the field is

    A. 80 m

    B. 120m

    C. 90m

    D. none of these

Answer: C

6. On increasing each side of a square by 25%, the increase in area will be 25% (b) 55% 55.5% (d) 56.25%

A. 0.25

B. 0.55

C. 0.405

D. 0.5625

Answer: B

7. The ratio of the area of a square to that of the square drawn on its diagonal is :

A. $1 : \sqrt{2}$

B. $1 : 2$

C. $1 : 3$

D. $1 : 4$

Answer: B

---

8. The perimeters of a square and a rectangle are equal. If their area be 'A' m^2 and 'B' m^2 respectively, then correct statement is

A. AltB

B. $A \leq B$

C. $A > B$

D. $A \geq B$

Answer: C

9. The length and breadth of a rectangular field are in the ratio 5 : 3 and its perimeter is 480 m. The area of the field is

A. $7200m^2$

B. $13500m^2$

C. $15000m^2$

D. $54000m^2$

Answer: B

10. The length of a room is 15 m. The cost of carpeting it with a carpet 75 cm wide at Rs.50 per metre is Rs.6000. The width of the room is

A. 6m

B. 8m

C. 13.4m

D. 18m

Answer: A

11. The sides of a triangle measure 13 cm, 14 cm and 15 cm. Its area is

A. $84 cm^2$

B. $91 cm^2$

C. $168 cm^2$

D. $182 cm^2$

Answer: A

12. The base and height of a triangle are 12 m and 8 m respectively. Its area is

A. $96m^2$

B. $48m^2$

C. $16\sqrt{3}m^2$

D. $16\sqrt{2}m^2$

Answer: B

13. The area of an equilateral triangle is $4\sqrt{3}cm^2$. The length of each of its sides is

A. 3cm

B. 4cm

C. $2\sqrt{3}m$

D. $\dfrac{1}{2}\sqrt{3}cm$

Answer: B

14. Each side of an equilateral triangle is 8 cm long. Its area is

   A. $32cm^2$

   B. $64cm^2$

   C. $16\sqrt{3}cm^2$

   D. $16\sqrt{2}cm^2$

Answer: C

---

15. The height of an equilateral triangle is $\sqrt{6}$ cm. Its area is

A. $3\sqrt{3}cm$

B. $2\sqrt{3}cm^2$

C. $2\sqrt{2}$

D. $6\sqrt{2}cm^2$

Answer: B

16. One side of a parallelogram is 16 cm and the distance of this side from the opposite side is 4.5 cm. The area of the parallelogram is

  A. $36cm^2$

  B. $72cm^2$

  C. $18cm^2$

  D. $54cm^2$

Answer: B

17. The lengths of the diagonals of a rhombus are 24 cm and 18 cm respectively. Its area is

A. $432 cm^2$

B. $216 cm^2$

C. $108 cm^2$

D. $144 cm^2$

Answer: B

18. The difference between the circumference and radius of a circle is 37 cm. The area of the circle is

    A. $111 cm^2$

    B. $148 cm^2$

    C. $154 cm^2$

    D. $259 cm^2$

Answer: C

19. The perimeter of the floor of a room is 18 m and its height is 3 m. What is the area of 4 walls of the room?

A. $21m^2$

B. $42m^2$

C. $54m^2$

D. $108m^2$

Answer: C

20. How many metres of carpet 63 cm wide will be required to cover the floor of a room 14 m by 9m

    A. 200m

    B. 210m

    C. 220m

    D. 185m

Answer: A

---

21. If the diagonal of a rectangle is 17 cm long and its perimeter is 46 cm, the area of the rectangle is

A. $100 cm^2$

B. $110 cm^2$

C. $120 cm^2$

D. $150 cm^2$

Answer: C

22. If the ratio of the areas of two squares is 9:1, then the ratio of their perimeters is

   A. $2:1$

   B. $3:1$

   C. $3:2$

   D. $4:1$

Answer: B

23. The ratio of the areas of two squares, one having its diagonal double that of the other , is $2:1$ (b) $3:1$ $3:2$ (d) $4:1$

A. $2:1$

B. $3:1$

C. $3:2$

D. $4:1$

Answer: D

24. The area of a rectangle 144 m long is the same as that of a square of side 84 m. The width of the rectangle is

A. 7m

B. 14m

C. 49m

D. none of these

Answer: C

25. The ratio of the area of a square of side a and that of an equilateral triangle of side a, is

A. $2 : 1$

B. $2 : \sqrt{3}$

C. $4 : 3$

D. $4 : \sqrt{3}$

Answer: D

26. The area of a square is equal to the area of a circle. What is the ratio between the side of the square and the radius of the circle?

A. $\sqrt{\pi} : 1$

B. $1 : \sqrt{3}$

C. $1 : \pi$

D. $\pi : 1$

Answer: A

27. Each side of an equilateral triangle is equal to the radius of a circle whose area is 154 cm . The area of the triangle is

A. $\dfrac{7\sqrt{3}}{4}cm^2$

B. $\dfrac{49\sqrt{3}}{4}cm^2$

C. $35cm^2$

D. $49cm^2$

Answer: B

28. The area of a rhombus is 36 cm and the length of one of its diagonals is 6 cm. The length of the second diagonal is

A. 6cm

B. $6\sqrt{2}cm$

C. 12cm

D. none of these

Answer: C

29. The area of a rhombus is 144 cm and one of its diagonals is double the other. The length of the longer diagonal is

    A. 12cm

    B. 16cm

    C. 18cm

    D. 24cm

Answer: D

30.   The area of a circle is $24.64m^2$. The circumference of the circle is

A. 14.64m

B. 16.36m

C. 17.60m

D. 18.40m

Answer: C

31. The area of a circle is increased by 22 cm' when its radius is increased by 1 cm. The original radius of the circle is

A. 6cm

B. 3.2cm

C. 3cm

D. 3.5cm

Answer: C

32. The radius of a circular wheel is 1.75 m. How many revolutions will it make in travelling 11 km?

A. 10

B. 100

C. 1000

D. 10000

Answer: C

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1. Find the area of a rectangular plot one side of which is 48 m and its diagonal 50 m.

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2. A room is 9 m by 8 m by 6.5 m. It has one door of dimensions $(2m \times 1.5m)$ and four windows each of dimensions $(1.5m \times 1m)$. Find the cost of painting the walls at 50 per m.

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3. Find the area of a square, the length of whose diagonal is 64 cm.

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4. A square lawn has a 2 m wide path surrounding it. If the area of the path is 136 m^2 , find the area of the lawn.

5. A rectangular lawn is 30 m by 20 m. It has two roads each 2 m wide running in the middle of it one parallel to the length and the other parallel to the breadth. Find the area of the roads.

6. Find the area of a rhombus having each side equal to 13 cm and one of whose diagonals is 24 cm.

7. The area of a parallelogram is $338m^2$. If its altitude is twice the corresponding base,find the base and the altitude.

8. Find the area of a right triangle having base

= 24 cm and hypotenuse = 25 cm.

A. 48 cm^2

B. 54 cm^2

C. 64 cm^2

D. 84 cm^2

Answer: D

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9. The radius of the wheel of a car is 35 cm. How many revolutions will it make to travel 33 km?

10. Find the radius of a circle whose area is $616cm^2$.

   A. 12 cm

   B. 13 cm

C. 14 cm

D. 11 cm

Answer: C

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Test Paper M C Q

1. The area of a circle is $154 cm^2$. Its diameter is

A. 14 cm

B. 11 cm

C. 7 cm

D. 22 cm

Answer: A

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2. The circumference of a circle is 44 cm. Its area is

A. $308cm^2$

B. $154 cm^2$

C. $77 cm^2$

D. $616 cm^2$

Answer: B

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3. Each diagonal of a square is 14 cm long. Its area is

A. $196 cm^2$

B. $88cm^2$

C. $98cm^2$

D. $147cm^2$

Answer: C

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4. The area of a square is $50cm^2$. The length of its diagonal is

A. $5\sqrt{2}cm$

B. 10 cm

C. $10\sqrt{2}cm$

D. 8 cm

Answer: b

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5. The length and breadth of a rectangular park are in the ratio 4:3 and its perimeter is 56 m. The area of the field is

A. $192m^2$

B. $300m^2$

C. $432m^2$

D. $228m^2$

Answer: A

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6. The sides of triangle are 13 cm, 14 cm and 15 cm. The area of the triangle is

A. $84cm^2$

B. $91cm^2$

C. $105cm^2$

D. $97.5cm^2$

Answer: b

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7. Each side of an equilateral triangle is 8 cm.

Its area is

A. $16\sqrt{3}cm^2$

B. $32\sqrt{3}cm^2$

C. $24\sqrt{3}cm^2$

D. $8\sqrt{3}cm^2$

Answer: a

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8. One side of a parallelogram is 14 cm and the distance of this side from the opposite side is 6.5 cm. The area of the parallelogram is

A. $45.5 cm^2$

B. $91 cm^2$

C. $182 cm^2$

D. $190 cm^2$

Answer: B

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9. The lengths of the diagonals of a rhombus

are 18 cm and 15 cm. The area of the rhombus

is

A. $270cm^2$

B. $135cm^2$

C. $90cm^2$

D. $180cm^2$

Answer: B

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Test Paper Fill In The Blanks

1. If d_1 and d_2 be the diagonals of a rhombus, then its area is (.....) sq units.

2. If I, b and h be the length, breadth and height respectively of a room, then area of its 4 walls = (.....) sq units.

3. 1 hectare = ... m^2.

4. $1 cm^2$ are = ... m^2.

5. If each side of a triangle is a cm, then its area = ... cm^2.

1. Area of a triangle = $(base \times height)$.

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2. Area of a parallelogram = Base xx Altitude

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3. Area of a circle = $2\pi r^2$.

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4. Circumference of a circle

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