



MATHS

BOOKS - ICSE

MENSURATION

Examples

1. Find the perimeter of :

a triangle having sides of lenghts 5.5 cm , 6 cm and 6.5 cm.



2. Find the perimeter of :

a rectangle of length 8.5 cm and breatth 5.5 cm.

A. = 25 cm.

 $\mathsf{B.}\,=28\,\mathsf{cm.}$

- $\mathsf{C.}\ =26\ \mathsf{cm.}$
- D. = 27 cm.

Answer: B

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3. Find the perimeter of :

a square of side 7.4 cm.

- A. = 30.6 cm.
- B. = 32.6 cm.
- C. = 35.6 cm.
- $\mathsf{D.}~=29.6~\mathsf{cm.}$

Answer: D

4. If the perimeter of a rectangular piece of land is 424 m and its breadth is 85 m , find its length .

A. = 147 m.

B. = 129 m.

 $\mathsf{C.}~=127~\mathsf{m}.$

D. = 137 m.

Answer: C

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5. If the circumference of a circle is 110 cm , find its radius .

A. 19.5 cm.

 $\mathsf{B}.\,17.5~\mathsf{cm}.$

 $\mathsf{C.}\,18.5\,\mathsf{cm.}$

 $\mathsf{D}.\,15.5~\mathsf{cm}.$

Answer: B



6. When a cyclist rides a cycle the wheel of the cycle having radius 77 cm makes 500 revolutions in 5 minutes .Find the speed of the cycle in km per hour . (Take $\pi = \frac{22}{7}$)

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7. A wire is bent in to the form of a square of side 27.5 cm . It is straightened and then bent into the shape of a circle What is the radius of the circle so formed ?

A. = 18.5 cm

 $\mathrm{B.}~=19.5~\mathrm{cm}$

 $\mathrm{C.}~=17.5~\mathrm{cm}$

D. $=20.5~\mathrm{cm}$

Answer: C

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8. Convert :

 $12m^2$ to cm^2

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9. Convert :

 $8cm^2$ "to" mm^(2)`

10. Convert :

 $2.5m^2$ to mm^2



11. Convert :

 $6000m^2$ to ares

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12. Convert :

 $35000m^2$ to hectares

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13. Convert :

 $1.8 \ {\rm hectares}$ to acres



14. Find the perimeter and area of a rectangle of length 16 cm and breadth 12.5 cm .

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15. The perimeter of a rectangular field is 216 metres and its breadth is 40 metres . Find the length and area of the rectangle.

A.
$$=4720m^2$$
.

- B. $= 3720m^2$.
- $C. = 2920m^2.$
- D. $= 2720m^2$.

Answer: D

16. The area of a rectangular park is $3392m^2$ and its breadth in 53 meters

Find the perimeter of the park .

A. = 234 m.

B. = 334 m.

 $\mathsf{C.}\ =434\,\mathsf{m}.$

D. = 534 m.

Answer: A



17. The dimensions of a room are 11.2 m by 9 m . The floor of the room is to be covered by marble tiles , each measuring 24 cm by 24 cm . Find the total number of tiles required . What is the cost of tiling the floor at Rs. 106 per tile ? 18. Find the perimeter and area of a square of side 9 cm .

A. $= 86cm^{2}$ B. $= 81cm^{2}$ C. $= 91cm^{2}$ D. $= 71cm^{2}$

Answer: B

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19. The perimeter of a square plot of land is 144 metres . Find its area.

A.
$$= 1286m^2$$

- B. $= 1296m^2$
- $\mathsf{C.}\ = 1276m^2$
- $\mathsf{D.}\ = 1206m^2$

Answer: C



20. The area of a garden in the shape of a square is 5184 m^2 . Find its perimeter .

- A. = 388 m.
- $\mathsf{B.}\ =288\ \mathsf{m.}$
- $\mathsf{C.}~=188~\mathsf{m.}$
- $\mathsf{D.}\ = 298\ \mathsf{m.}$

Answer: B

21. Find the area and the perimeter of the shaded figures ,given below :



22. The area of a square field is 64 hectares .Find the cost of fencing it with wire at Rs. 21.50 per metre .



23. A rectangular garden is 120 m long and 65 m broad .A path of uniform width of 5 m has to be constructed around it on its outside .Find the cost of gravelling the path at Rs. 11.40 per m^2 .

24. A saree 4 m long and 1.25 m wide has a border of width 25 cm all around it on the inside .Find the cost of knitting the border at 20 paise per cm^2 .



25. A rectangular lown 76 m long and 54 m broad has two cross - roads ,one 1.5 m wide running parallel to its length and the other 2 m wide , running parallel to its breadth. Find the cost of constructing these roads at Rs. 216 per m^2 .

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26. A square lown is surrounded by path 2 m wide around it, If the area of the path is $120m^2$, find the area of the lawn.



27. The base of a triangle is 36 cm and its corresponding height is 13 cm . Find the area of the triangle .

 $\mathsf{A.}~=534 cm^2.$

 $\mathsf{B.} = 224 cm^2.$

 $C. = 334 cm^2.$

D. $= 234 cm^2$.

Answer: D

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28. The base and height of a triangle are in the ratio 7: 4 If the area of the

triangle is $87.5 cm^2$, find its base and height .

29. Find the area of a triangle whose sides are 28 cm , 21 cm and 35 cm . Also find the length of the altitude corresponding to the largest side of the triangle .

30. Find the area and height of an equilateral triangle of side 8 cm (Take

 $\sqrt{3} = 1.73$).

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31. Find the area of a right triangle whose hypotenuse measures 17 cm and one of the other two sides 8 cm .

- A. $= 65 cm^2$.
- $\mathsf{B.}~=50cm^2.$

 $C. = 60 cm^2.$

D. $= 70 cm^2$.

Answer: C



32. The base of a triangular field is three times its height . If the cost of cultivating the field at Rs. 367.20 per hectare is Rs. 4957.20 find its base and height.

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33. Find the of area of the parallelogram having :

base = 16.5 cm and height =6.8 cm

34. Find the of area of the parallelogram having :

base = 1.6 m and height = 45 cm

A. $= 0.82m^2$

- $\mathsf{B.}~=0.72m^2$
- $\mathsf{C}_{\cdot}\,=\,0.92m^2$
- D. $= 0.62m^2$

Answer: B

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35. The base of a parallelogram is one - third of it's height, the area of this parallelogram is $147cm^2$, find its height.

A. =24 cm .

 $\mathsf{B.}\ = 21\ \mathsf{cm}\ .$

 $\mathsf{C.}\ = 22\ \mathsf{cm}\,.$

 $\mathsf{D.}\ = 23\ \mathsf{cm}\ .$

Answer: B



36. The area of a parallelogram PQRS is $162cm^2$ This parallelogram has adjacent sides PQ = 27 cm and QR = 12 cm . Find the distance between its longer sides and that between its shorter sides .

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37. ABCD is a parallelogram whose adjacent sides AB = 48 cm and BC = 14

cm . One of its diagonds AC = 50 cm . Find :

(i) the area of the parallelogram ABCD.

(ii) the distance between the longer sides.

(iii) the distance between the shorter sides.

38. Find the area of the rhombus , the lengths of whose diagonals are 17.5

cm and 22.4 cm.

Watch Video Solution 39. Find the area of a rhombus having each side equal to 17 cm and one of its diagonal equal to 30 cm. A. $440 cm^2$. B. $340 cm^2$. C. $240 cm^2$. D. $540 cm^2$. Answer: C

40. Find the area of a circle of radius 5.6 cm.

A. $58.56cm^2$.

B. 78.56 cm^2 .

C. $98.56cm^2$.

D. 88.56 cm^2 .

Answer: C

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41. Find the area of a circle whose circumference is 66 cm.



42. The area of a circular field is 2464 m^2 . Find the cost of fencing it at the rate of Rs. 6.50 per metre .

A. Rs. 2144.

B. Rs. 1144.

C. Rs. 1244.

D. Rs. 1844.

Answer: B

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43. A circular running track has inner radius 126 m and outer radius 140 m

. Find the area of the track .

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Exercise 23 A

1. Find the perimeters of :

A triangle ABC having sides of lengths , AB=7 cm , BC =5 cm , AC = 8.5 cm



A rhombus having each side of length 6.3 cm .

5. A rectangular field has perimeter 186 m and breadth 35 m . Find its

length .

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6. Find the length of each side of a square plot having perimeter 172 m.

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7. A rectangular plot is 125 m long and 72 m broad . Find the cost of fencing it at Rs. 27 per metre.

A. Rs. 10645

B. Rs. 10638

C. Rs. 10639

D. Rs. 10649

Answer: B



9. The circumference of a circular garden is 66 m . Find its diameter.(Take

$$\pi = rac{22}{7}$$

A. 25 m

B. 24 m

C. 21 m

D. 27 m

Answer: C

10. The diameter of a wheel of a car is 1.12 m . Find the distance covered by

the car in making 5000 revolutions by its wheels . (Take $\pi=rac{22}{7}
ight)$



11. The radius of a wheel of a cycle is 70 cm and it takes 5 minutes to make 3000 rotations . Find the speed of the cycle in km per hour . (Take $\pi = \frac{22}{7}$).

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12. How many revolutions would a cycle wheel of diameter 1.6 m make to

cover a distance of 352 metres ? (Take $\pi=rac{22}{7}$)

A. 35

B.70

C. 71

Answer: B



13. A wire is bent in the form of a square of side 16.5 cm . It is straightened and then bent into a circle. What is the radius of the circle so formed ?

(Take $\pi=rac{22}{7}$)

A. 16.5 cm

B. 11.5 cm

C. 10.5 cm

D. 12.5 cm

Answer: C

14. A wheel of a car rotated 1000 times in travelling a distance of 1.76 km .

Find the radius of the wheel . (Take $\pi=rac{22}{7}$)

A. 58 cm

B. 48 cm

C. 38 cm

D. 28 cm

Answer: D

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1. Find the area of each of the figures drawn on the unit square grid paper given below :



2. Find the perimeter and area of a rectangle having :

Length = 9.6 cm , Breadth =1.5 cm



3. Find the perimeter and area of a rectangle having :

Length = 8 m , Breadth = 9 dm

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4. Find the perimeter and area of a rectangle having :

Length = 6 hm , Breadth = 8 dam



5. Find the perimeter and area of a rectangle having :

Length = 1 m 25 cm , Breadth = 8 cm





6. Find the perimeter and area of a square whose side measures :

14 cm

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7. Find the perimeter and area of a square whose side measures :

3.5 cm

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8. Find the perimeter and area of a square whose side measures :

1m 20 cm

9. The perimeter of a rectangular plot of land is 240 m and its length is 63

m . Find the breadth and area of the plot.



10. The perimeter of a rectangular grassy plot is 189 m and its breadth is

10.5 m . Find the length and area of the plot .

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11. A rectangular garden is 175 m long and 96 m broad . Find the cost of

fencing it at Rs.17.50 per metre .Also ,find the cost of ploughing it at Rs.

4.50 paise per square metre.



12. Square tiles of side 20 cm are to be laid on the floor of a room 10 m by 4.5 m . How many tiles will be needed ? Find the cost of putting the tiles at Rs. 131 .40 per tile .

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13. The area of a rectangular park is 1560 m^2 and its breadth is 24 m Find the length and perimeter of the park . Also , find the cost of fencing it at Rs. 22.50 per metre.

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14. Find the permeter of a square whose area is 196 cm^2 .

A. 86 cm

B. 66 cm

C. 56 cm

D. 46 cm

Answer: C



15. The area of a square field is 1 hectare . What is its perimeter ?

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16. It costs Rs. 5400 to fence a square field at Rs. 13.50 per metre . Find (i)

the length of the side of the field (ii) the area of the field.

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17. A rectangular plot of I and is 50 m long .The cost of levelling the plot at Rs. 12.50 per m^2 is Rs. 20000. Find (i) the area of the plot , (ii) the bradth of the plot , (iii) the perimeter of the plot .

18. Find the area and perimeter of the shaded part in each of the following figures .



19. Find the area and perimeter of the shaded part in each of the following figures .



20. Find the area and perimeter of the shaded part in each of the following figures .



21. Find the area and perimeter of the shaded part in each of the following figures .







1. A room is 10 m long and 6 m broad . It is surrounded by a verandah which is 2 m wide all around it . Find the cost of flooring the verandah with marble at Rs. 236 per m^2 .

2. A hall is 16m long and 12 m braod .Find the cost of carpeting it at Rs. 615 per m^2 after leaving a margin of 1 metre all around .

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3. A sheet of paper measures 35 cm by 25 cm . A strip of 5 cm width is cut from it , all around Find the area of the remaining sheet and also the area of the cut - out strip.

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4. A path 3 m wide is running along the inside of the boundary of a rectangular field 116 m by 76 m. How much money is needed to gravel the path at Rs. 42.50 per m^2 ?

5. A path 2.5 m wide is running around a rectangular grassy plot 40 m by 35 m . Find the area of the path and the money needed for tilling it Rs . 115.60 per m^2 .



6. A rectangular lawn 115 m long and 64 m broad has two cross - paths 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 padths at Rs. 114 per m^2



7. The central hall of a school is 22 m long and 15.5 m wide A carpet is to be laid on the floor leaving a strip of 75 cm width from the walls uncovered .Find the area of the strip left incovered .

8. Find the area of the shaded region in each of the following figure :





Exercise 23 E

1. Find the area of the triangle ,having :

base = 16 cm , heigth = 7.5 cm



2. Find the area of the triangle ,having :

base = 5.6 m , heigth = 3.5 m



3. Find the area of the triangle ,having :

base = 6.4 m , heigth = 8 dm

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4. Find the area of the triangle ,having :

base =9.5 cm , height = 6 mm

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5. Find the height of the triangle whose :

area $28.9m^2$,base = 8.5 m

6. Find the height of the triangle whose :

area $\,= 56 dm^2$, base = 2.8 m



7. Find the base of the triangle whose :

area $= 4.2m^2$, height = 2.4 m.

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8. Find the base of the triangle whose :

area $\,=2.4 dm^2$, height = 80 cm



9. Find the area of the triangle whose sides are 13 cm , 20 cm and 21 cm .

Also find the height of the triangle corresponding to the largest side .



10. Find the area of the triangle whose sides are 50 cm , 48 cm and 14 cm

.Find the heigth of triangle corresponding to the side measuring 48 cm .

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11. Find the area of an isosceles triangle in which each of the equal sides

measures 30 cm and the third side is 48 cm long

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12. The base and the heigth of a triangle are in the ratio 5:3 and its are is

 $43.2m^2$. Find the base and the height of the triangle .

13. Find the area and the height of an equilateral triangle whose each

side measures :

12 cm

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14. Find the area and the height of an equilateral triangle whose each

side measures :

10 m

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15. Find the area and the height of an equilateral triangle whose each

side measures :

6.4 m (Take $\sqrt{3}=1.73$ in each case)

16. Find the area of a right triangle whose hypotenuse is 26 cm long and

one of the sides containing the right angle measures 10 cm .

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17. The area of a right triangle is 240 cm^2 and one of its legs is 16 cm long

. Find the length of the other leg .

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

. Find its hypotenuse.



19. The sides of a triangle are in the ratio 13 : 14 : 15 and its perimeter is

84 cm . Find the area of the triangle .

20. The base of an isosceles triangle is 12 cm and its perimeter is 32 cm .

Find its area .

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21. The cost of painting the top surface of a triangular board at 80 paise per square metre is Rs. 176 . 40 .If the height of the board meansures 24.5m , find its base .

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22. Calculate the area of the quadrilateral ABCD in which

AB =BD =AD = 10 cm , $\angle BCD = 90^\circ ~~{
m and}~~CD = 8$ cm . (Take $\sqrt{3} = 1.732$



23. Calculate the area of the quadrilateral PQRS shown in the adjoining

figure, it being given that PR = 8 cm, RQ = 17 cm,

 $\angle RPQ = 90^{\circ}, RS = 6cm \, \, ext{and} \, \, \angle PRS = 90^{\circ}$



24. Find the area of a quadrilateral ABCD whose diagonal AC is 25 cm long and the lengths of perpendiculars from opposite vertices B and D on AC



25. Find the area of the quadrilateral ABCD , given in the adjoining figure

in which AB = 14 cm, BC = 78 cm, CD = 112 cm BD = 50 cm and DA = 48 cm.



base = 3.8 m , height = 1.25 m



3. Find the area of the parallelogram having :

base = 75 cm, height = 1.4 m

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4. The height of a parallelogram is three-eighths of its base. If the area of the parallelogram is $96cm^2$, find its height and base .



5. ABCD is a parallelogram having adjacent sides AB = 35 cm and BC = 28

cm . If the distance between its longer sides is 8 cm , find :

- (i) the area of the parallelogram
- (ii) the distance between its shorts sides

6. Find the area of rhombus whose diagonals are :

(i) 12 cm , 21 cm

(ii) 17.8 cm , 25 cm



7. Find the area of a rhombus having each side equal to 20 cm and one of

its diagonals equal to 24 cm .

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8. The area of a rhombus is 243 cm^2 .If one of the diagonals is 19.5 cm

long, find the length of the other diagonal.



9. PQRS is a parallegoram whose adjecent sides PQ = 20 cm and QR = 21 cm one of its diagonals QS = 13 cm , find :

the area of the parallelogram PQRS.



11. PQRS is a parallegoram whose adjecent sides PQ = 20 cm and QR = 21

cm one of its diagonals PR = 13 cm , find :

the distance between the shorter sides.

12. Find the of the shaded region of the adjoining figure , it being given that

 $\angle FAB = \angle CBA = 90^{\circ}, ED||AB||FC, EG \perp FC, DH \perp FC, FG = HG$ and distance between AB and ED = 13 cm.



13. Find the area of the shaded rigion in the adjoing figure , it being given that ABCD is a square of side 12 cm , CE = 4 cm ,FA = 5 cm and BG = 5 cm.





14. Find the area of the shaded rigion in the adjoing figure :



15. Find the area of the shaded region in the adjoing figure :



16. Find the area of the shaded region in the adjoing figure :



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17. Find the area of the shaded region in the adjoing figure :







18. Find the area of the shaded region in the adjoing figure :



19. Find the area of the shaded region in the adjoing figure :



1. Find the area of a circle whose radius is :

(i) 2.8 m

(ii) 8.4 m



4. Find the radius and circumference of a circle whose area is :

 $55.44m^{2}$

(ii) $186.34 cm^2$



5. Taking $\pi=3.14$, find the radius and circumference of a circle whose

area is :

(i) $200.96 cm^2$

(ii) $379.94m^2$



6. In a rectangular plot of land 70 m long and 40 m board , a circular garden of radius 17.5 m is developed . Find the cost of turfing the remaining portion at the rate of Rs. 28.50 per sq . Metre .

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7. A wire when bent in the form of square , encloses an area of 146 . 41 cm^2 . If this wire is straightened and then bent to form a circle , what will be the area of the circle so formed ?

8. From a rectangular cardboard sheet 145 cm long and 32 cm broad ,42 circular plates each of diameter 8 cm have been cut out . Find the area of the remaining portion of the sheet.

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9. A circle is inscribed in a square of area $784cm^2$ Find the area of the circle.

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10. Find the area of the space enclosed by two concentric circles of radii

25 cm and 17 cm.

11. A path of width 3.5 m runs all around a circular pool having an area of

 $962.5m^2$. Find the area of the path .



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13. The area of a ring is $528cm^2$ and the radius of the outer circle is 17 cm

. Find :

(i) the radius of the smaller circle .

(ii) the width of the ring.

14. The area of circular garden is $5544m^2$.Outside this garden , a path of uniform width is laid all around . The area of the path is $2002m^2$.Find : (i) the radius of the circular garden .

(ii) the width of the path.