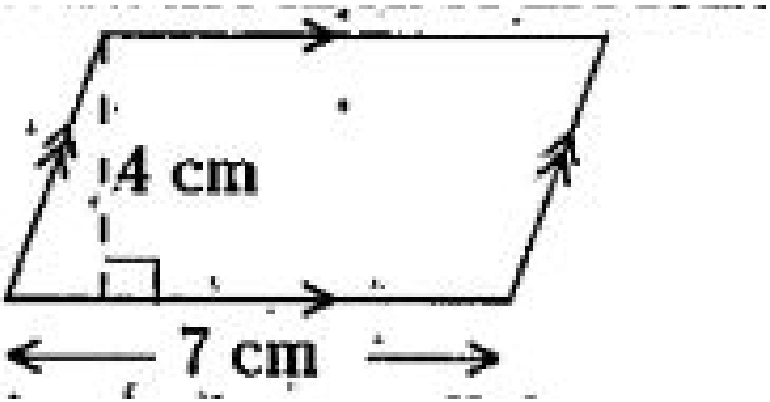
MATHS

BOOKS - VGS PUBLICATION-BRILLIANT

AREA OF PLANE -FIGURES

Example

1. Find the area of the following figures:



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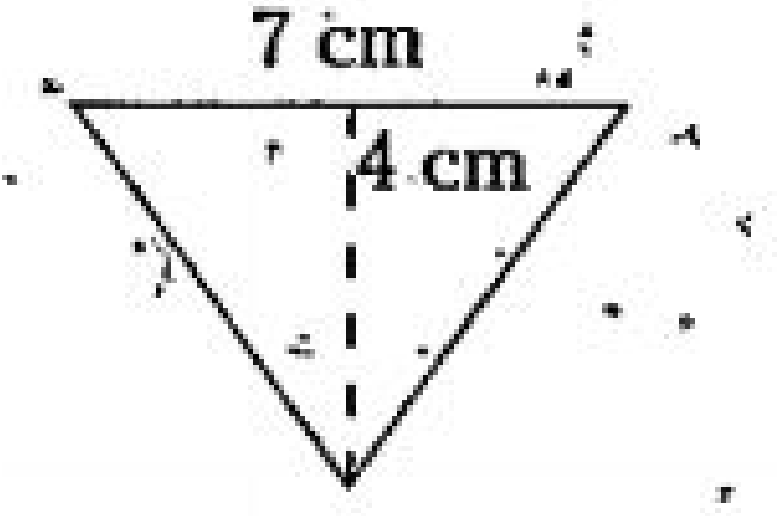
2. Find the area of the following figures:



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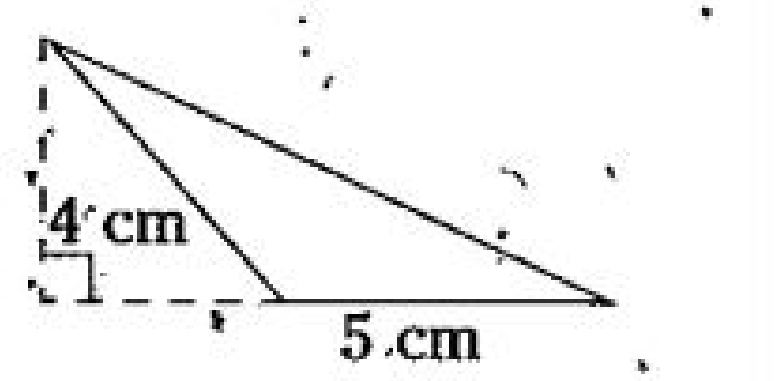
3. Find the area of the following figures:



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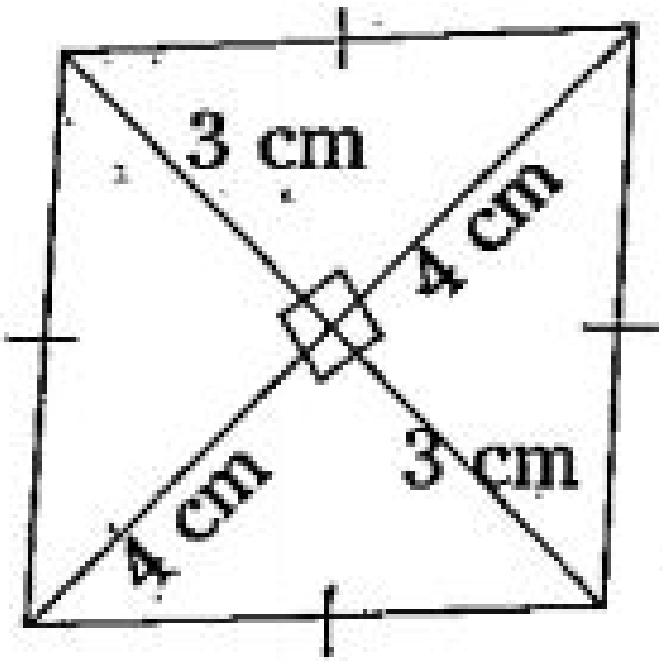
4. Find the area of the following figures:



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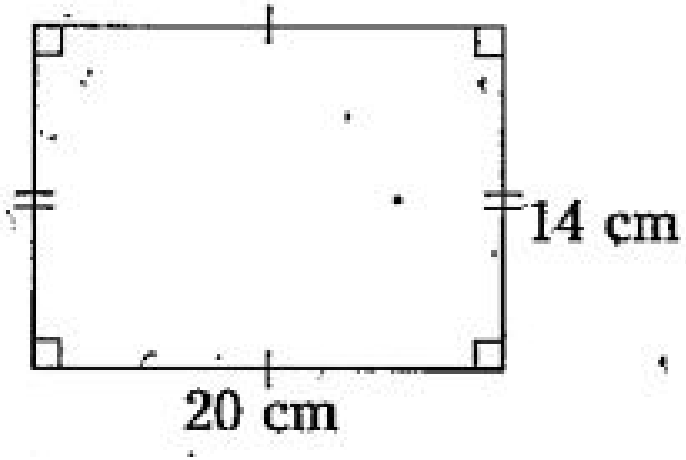
5. Find the area of the following figures:



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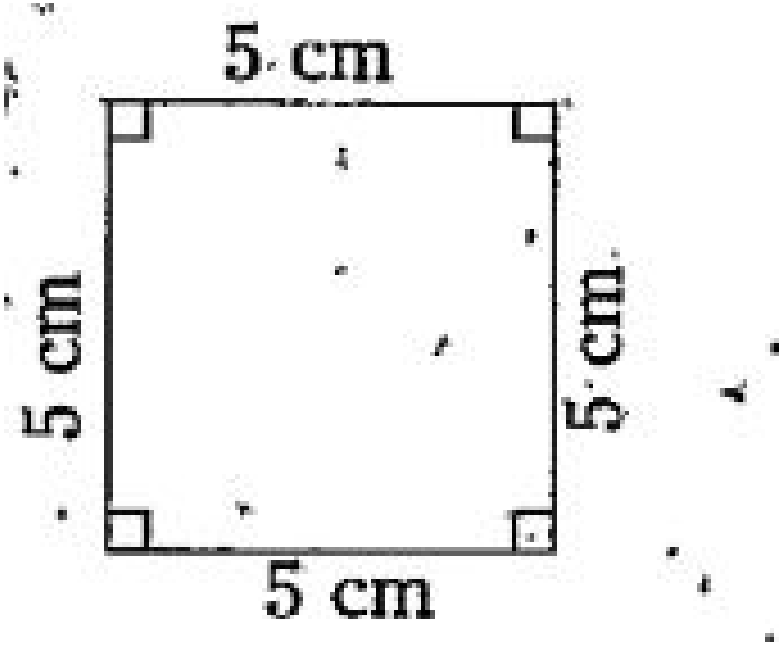
6. Find the area of the following figures:



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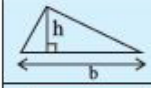
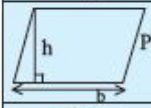
7. The measurements of some plane figures are given in the table below. However, they are incomplete. Find the missing information

Figure	Measurements	Formula for area	Area of the given figure
 Square	Side of the square is 15 cm	A = side×side	.....
 Rectangle	Length = 20 cm Breadth = ...	A = $l \times b$	280cm^2
 Triangle	Base = 5 cm Height = ...	A = ...	60cm^2
 Parallelogram	Height = 7.6cm Base = ...	A = b × h	38cm^2
 Rhombus	d_1 = 4 cm d_2 = 3 cm	.....	.....

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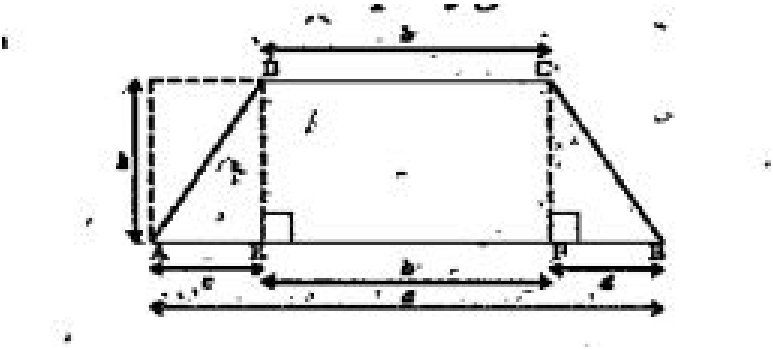
8. Here is a figure of a playground. Find the area of the playground.



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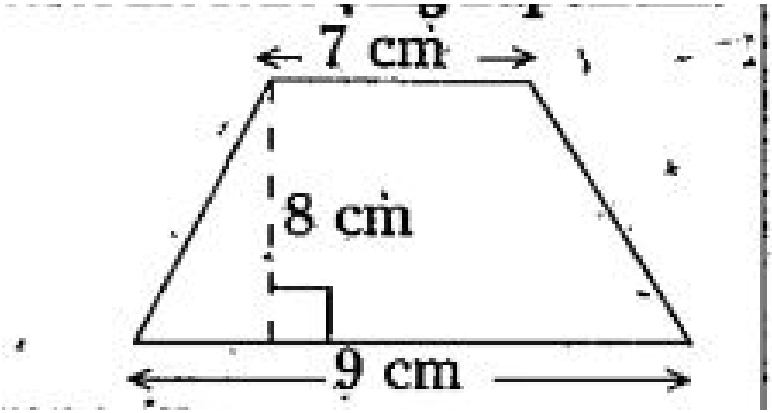
9. Find the area of the following trapezium.



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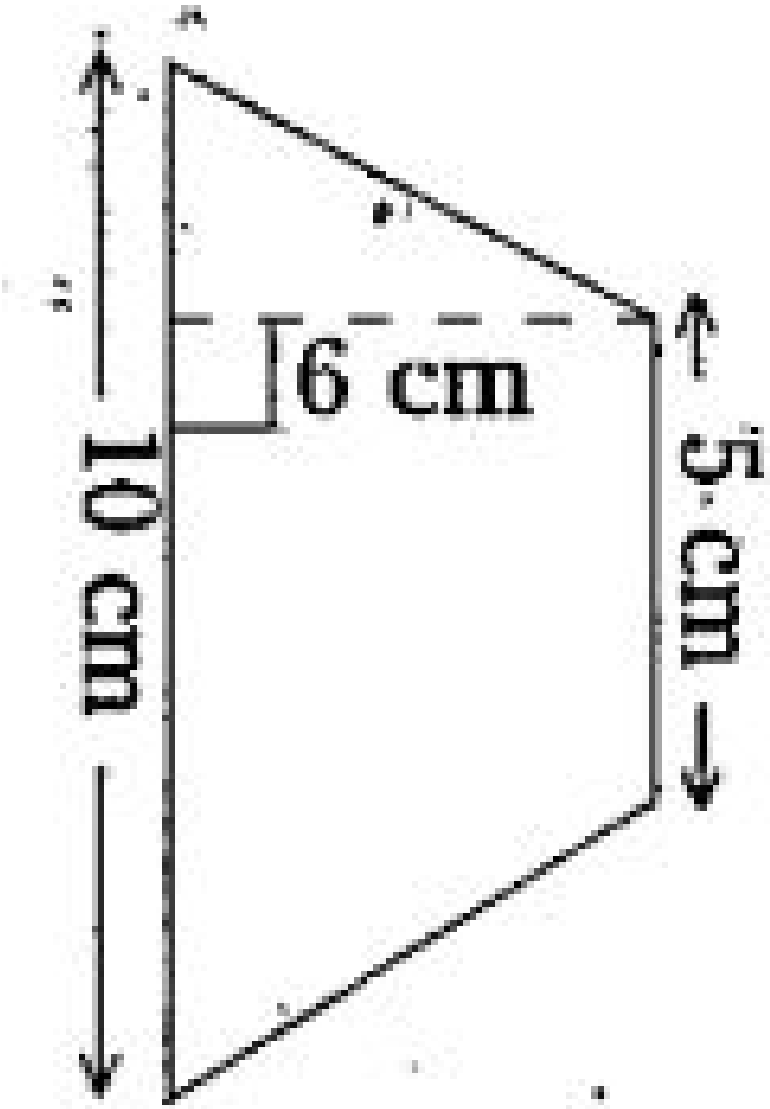
10. Find the area of the following trapezium.



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11. Area of a trapezium is 16 cm^2. Length of one parallel side is 5 cm and distance between two parallel sides is 4 cm. Find the length of the other parallel side. Try to draw this trapezium on a graph paper and check the area.

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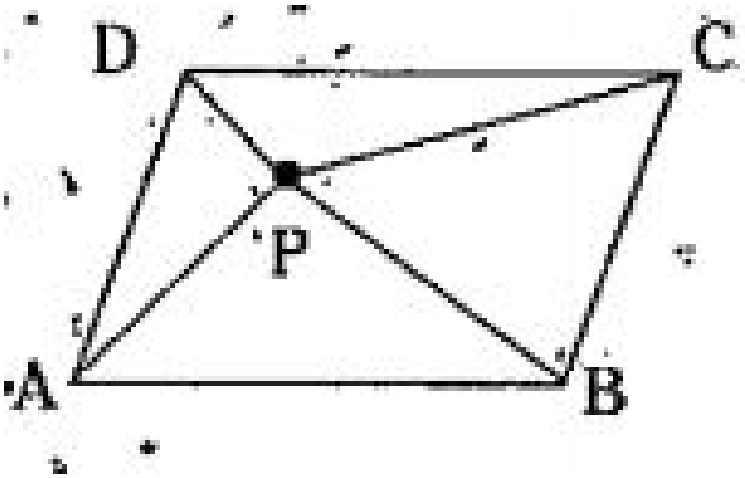
12. ABCD is a parallelogram whose area is 100 sq.cm. P is any point inside the parallelogram (see fig.) find the area of $\triangle APB + \triangle CPD$.



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13. The parallel sides of trapezium are 9cm and 7 cm long and the distance between them is 6 cm. Find the area of the trapezium.

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14. Area of a trapezium is 480 cm^2. Length of one of the parallel sides is 24 cm and the distance between the parallel sides is 8 cm. Find the length of the other parallel side.

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15. The ratio of the lengths of the parallel sides of a trapeziuin is 4:1. The distance between them is 10 cim. If the area of the trapezium is 500cm^2. Find the lengths of the parallel sides.

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16. In the given figure, ABED is a parallelogram in which AB=DE=10 cm and the area of A

$\triangle BEC$ is 72 cm^2. If CE=16 cm, find the area of the trapezium ABCD.

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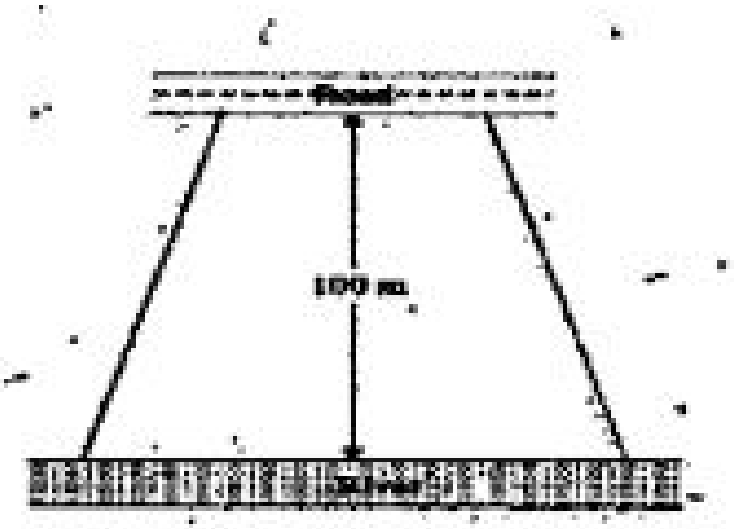
17. Mohan wants to buy a field on a river side. A plot of field as shown in the adjacent figure is available for sale. The length of the river side is double the length of the road side and are parallel. The area of this field is 10,500m^2 and the distance between the river and road is 100m. Find the length of the side of the plot

along the river.



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Exercise

1. We know that parallelogram is also a quadrilateral. Let us split such quadrilateral into two triangles. Find their areas and subsequently that of the parallelogram. Does this process in turn with the formula that you already know?

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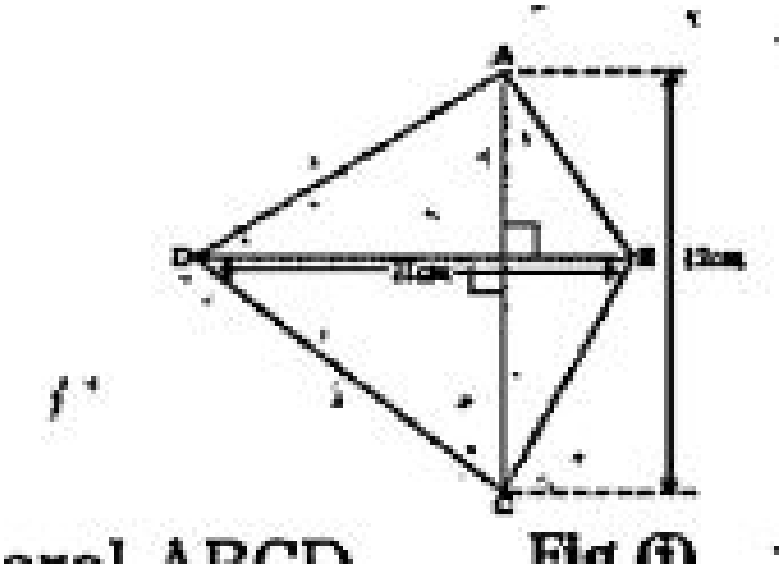
2. Find the area of quadrilateral ABCD.



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3. Find the area of a rhombus whose diagonals are oflength 10 cm and 8.2cm.

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4. A parallelogram is divided into two congruent triangles by drawing a diagonal across It. Can we divide a trapezium into two congruent triangles?

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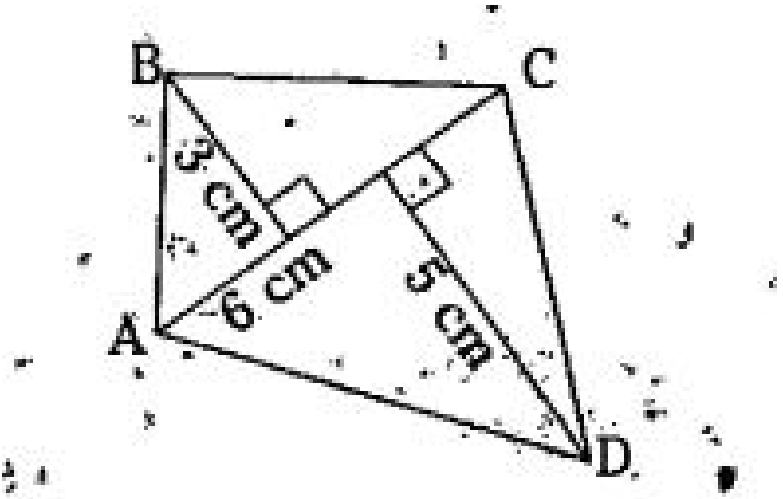
5. Find the area of following quadrilaterals.



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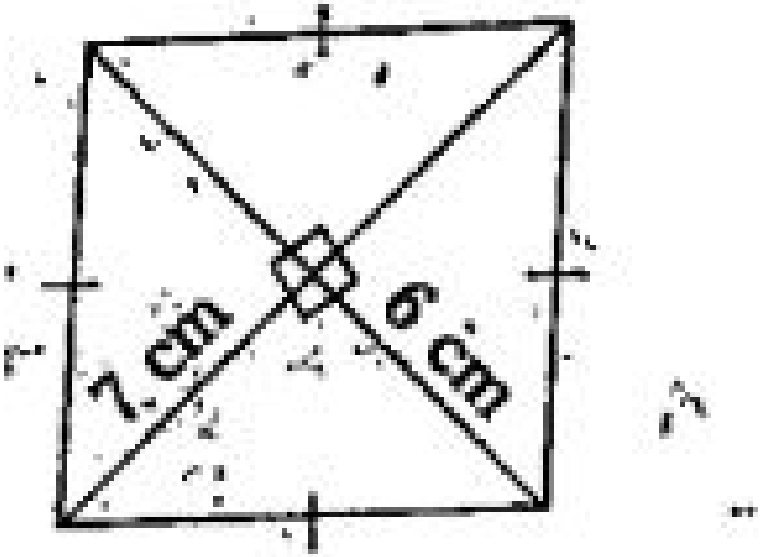
6. Find the area of following quadrilaterals.



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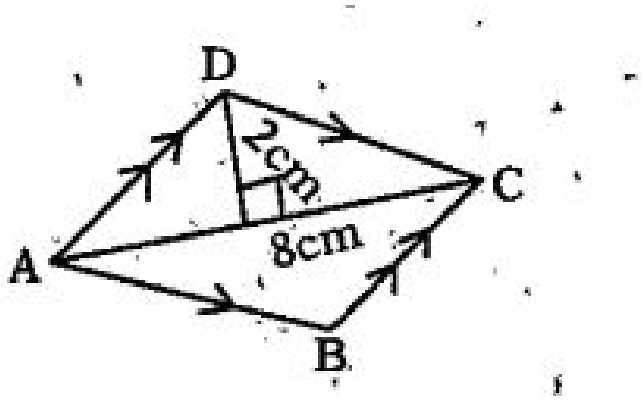
7. Find the area of following quadrilaterals.



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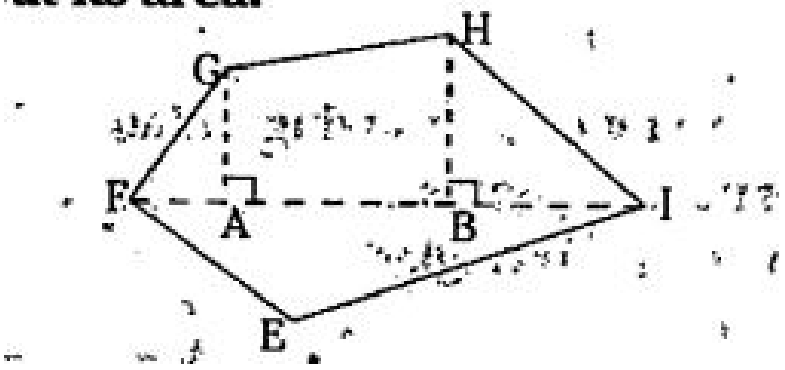
8. Divide the following polygon into parts (triangles and trapezium) to find out its area.



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9. Polygon ABCDE is divided into parts as shown in the figure. Find the area. If AD 8 cm, AH'= 6 cm, AF 3 cm and perpendiculars BF 2 cm, CH=3 cm and EG= 2.5 cm.

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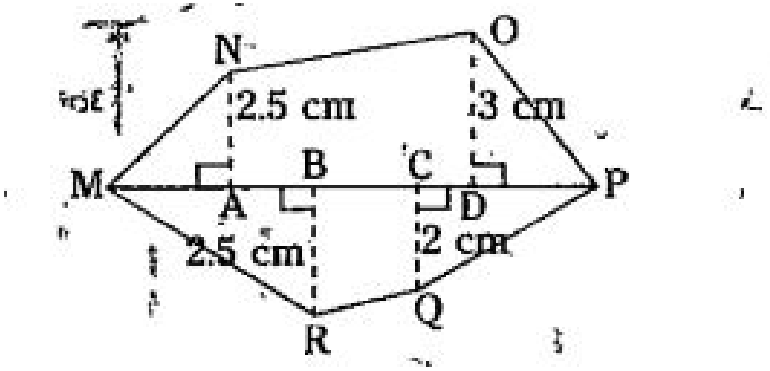
10. Find the area of polygon MNOPQR if MP =9 cm, MD =7 cm, MC=6 cm, MB=4 cm, MA =2 cm.NA, OD, QC and RB are perpendiculars to diagonal MP.



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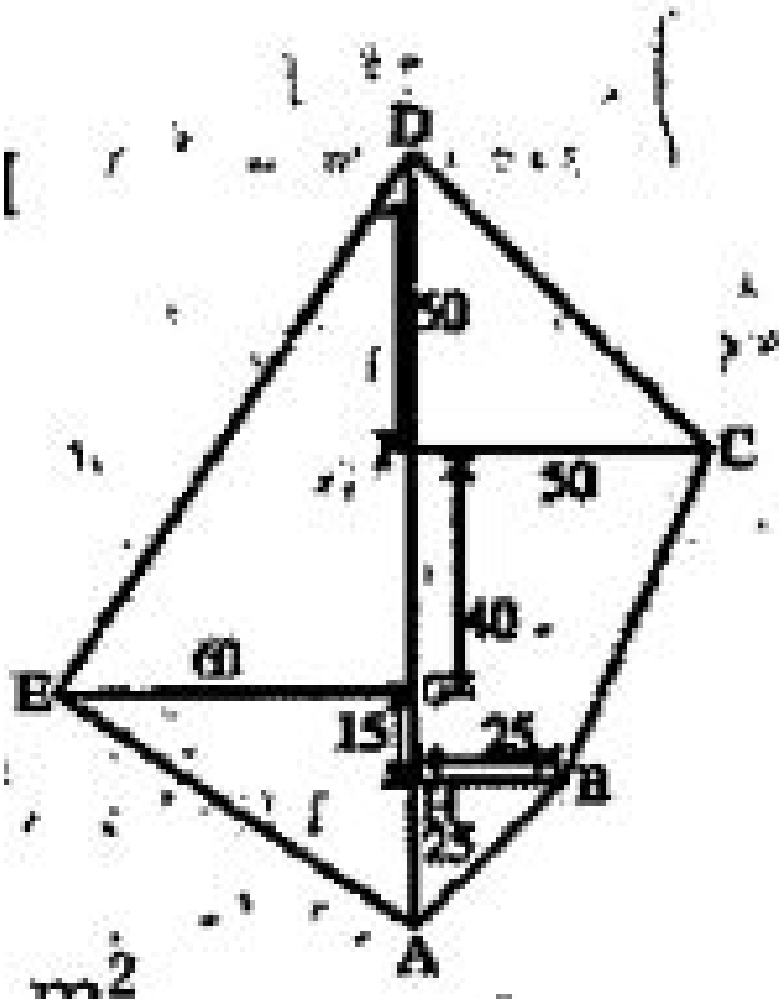
11. Find the area of the field shown along side, All dimension are in metres.



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12. There is a hexagon MNOPQR of each side 5 cm and symmetric about NQ. Find the area of this hexagon.

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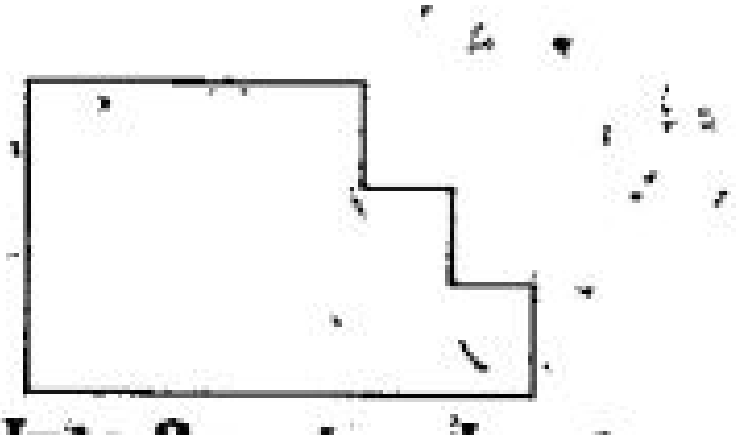
13. Divide the given shapes as instructed.



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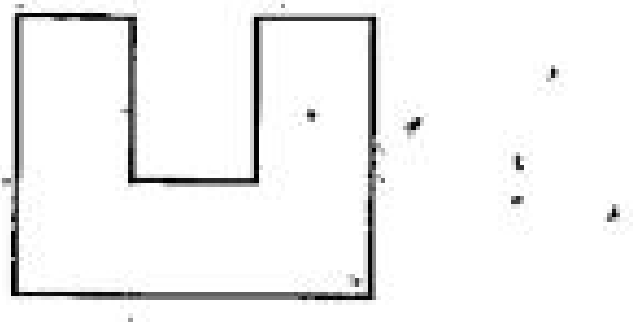
14. Divide the given shapes as instructed.



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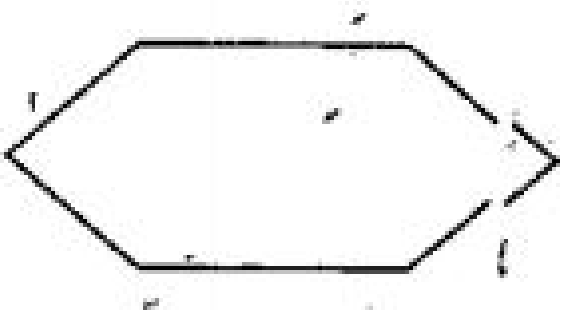
15. Divide the given shapes as instructed.



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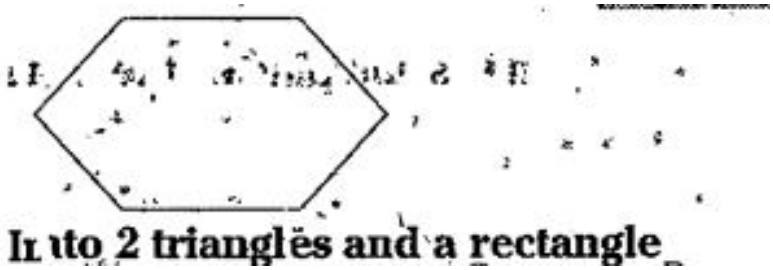
16. Divide the given shapes as instructed.



Into 2 triangles and a rectangle

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17. Divide the given shapes as instructed.

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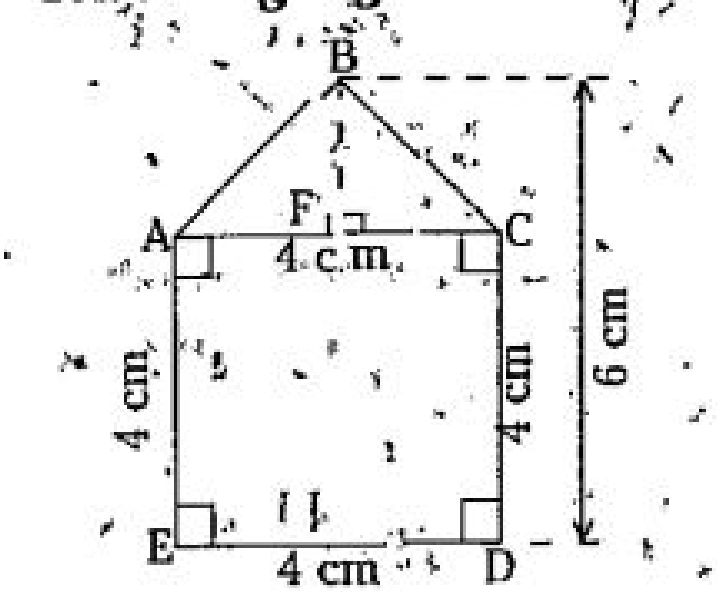
18. Find the area enclosed by each of the following figures.



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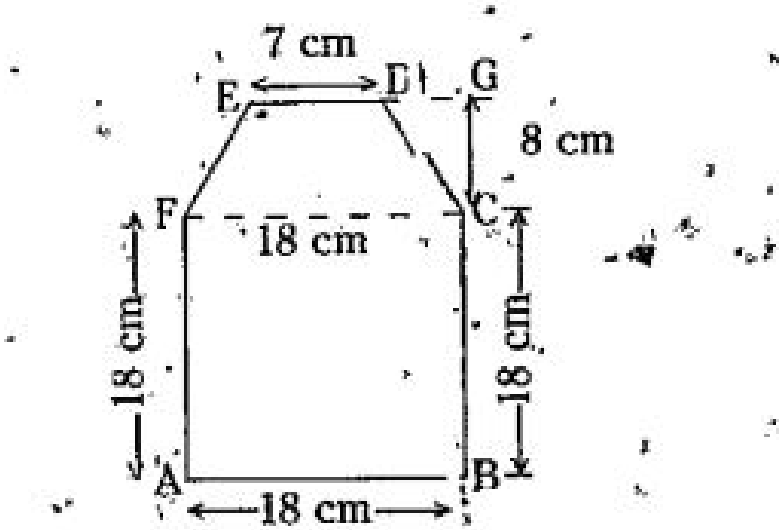
19. Find the area enclosed by each of the following figures.



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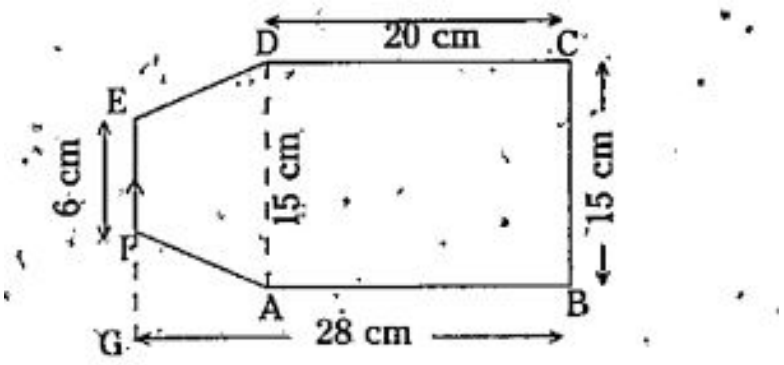
20. Find the area enclosed by each of the following figures.



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21. Calculate the area of a quadrilateral ABCD when length of the diagonal. AC=10 cm and the lengths of perpen diculars from B and D on AC be 5 cm and 6 cm respectively.

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22. Find Tan36/Cot54.

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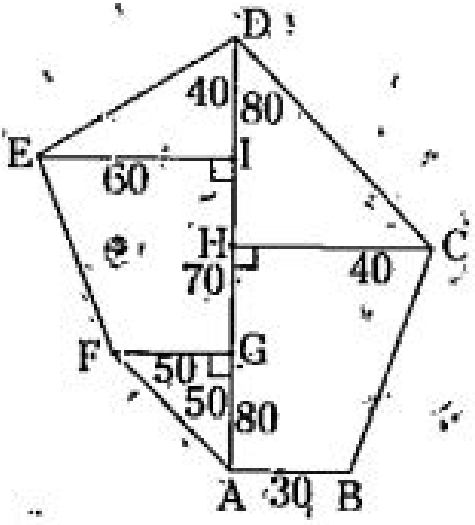
23. Find the area of each of the following fields. All dimensions are in metres.



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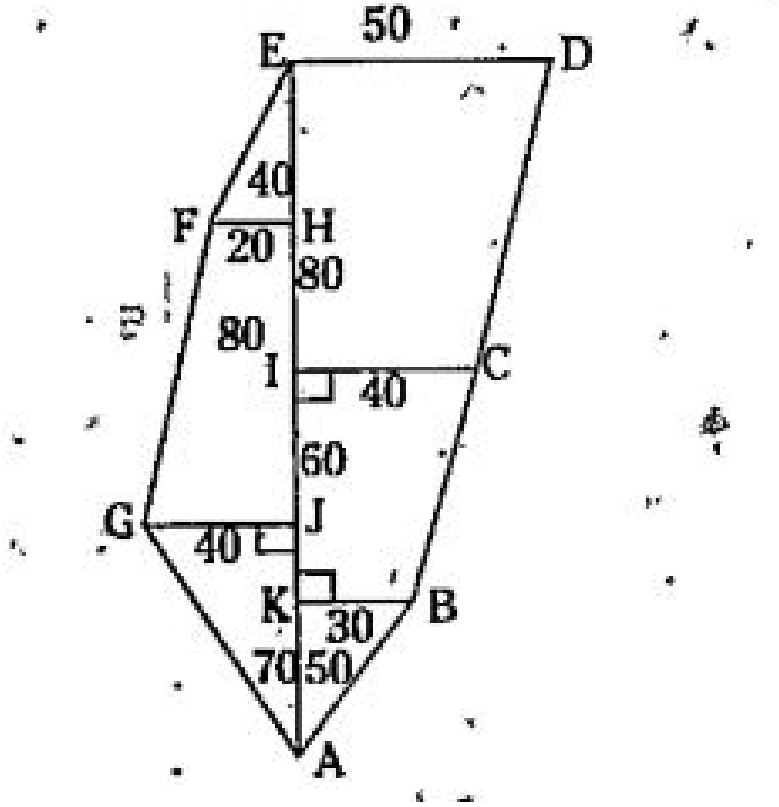
24. Find the area of each of the following fields. All dimensions are in metres.



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25. The ratio of the length of the parallel sides of a trapezium is 5: 3 and the distance between them is 16 cm. If the area of the trapezium is 960 cm^2, find the length of the parallel sides.

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26. The floor of a building consists of around 3000 tiles which are rhombus shaped and each of its diagonals are 45 cm and 30 cm in

length. Find the total cost of flooring if each tile costs rupees 20 per m^2.

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27. Find the value of cos45°/ sec30°+cosec60°

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28. Draw circles having different radius on à graph paper. Find the area by counting the

number of squares, Also find the area by using formula. Compare the two answers.

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29. A wire is bent into the form of a square of alde 27.5 cm. The wire is straightened and bent into the form of a circle. What will be be the radius of the circle so forined?

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30. The circumference of a circle is 22 cm. Find Its area. And also find the area of the semicircle.

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31. Observe the adjacent figure. It shows two circles with the same centre. The radius of the larger circle is 10 cm and the radlus of the smaller circle is 4 cm. Find The shaded area between the two circles. (takeπ= 3.14)

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32. Observe the adjacent figure. It shows two circles with the same centre. The radius of the larger circle is 10 cm and the radlus of the smaller circle is 4 cm. Find The shaded area between the two circles. (takeπ= 3.14)

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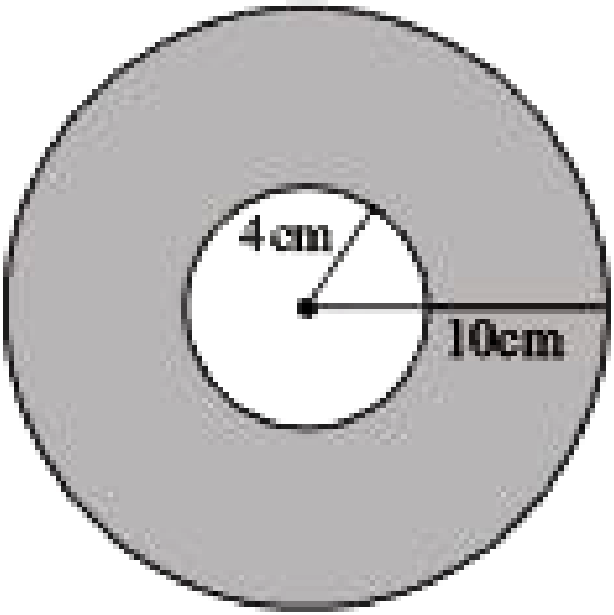
33. Observe the adjacent figure. It shows two circles with the same centre. The radius of the

larger circle is 10cm and the radius of the smaller circle is 4cm.

the area of the larger circle



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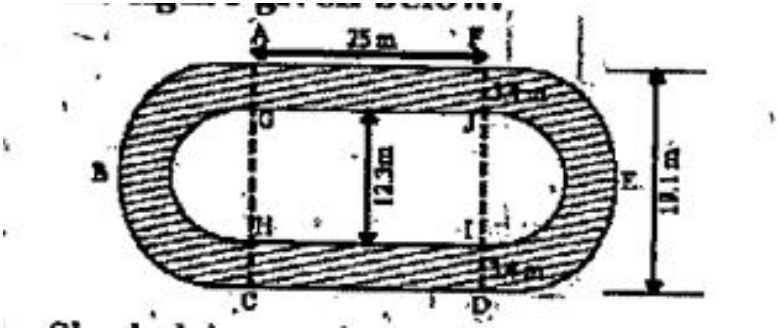
34. Calculate the area of shaded part of the figure given below.



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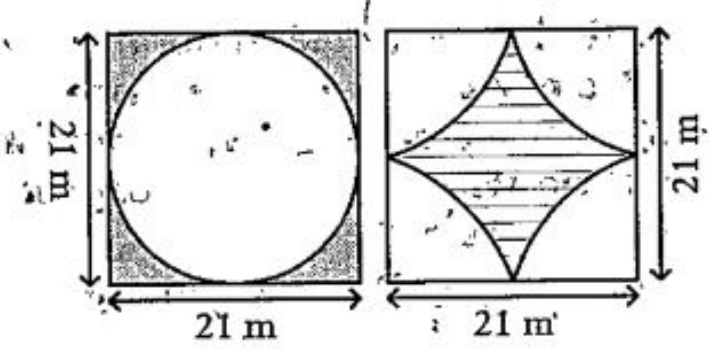
35. Find the area of shaded region in each of the following figures.



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36. A rectangular acrylic sheet is 24 cm by 20 cm. From it, 49 circular buttons, each of diameter 3.5 cm have been cut out. Find the area of the remaining sheet.

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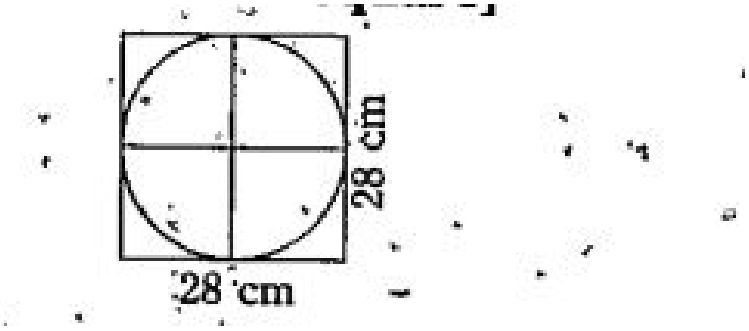
37. Find the area of a circle inscribed in a square of side 28 cm. [Hint: Diameter of the circle is equal to the side of the square]



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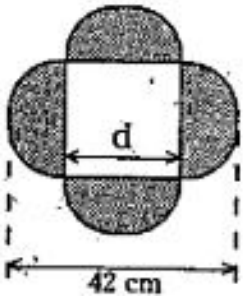
38. Find the area of the shaded region in each of the following figures.



(Hint: $d + \frac{d}{2} + \frac{d}{2} = 42$)

$d = 21$

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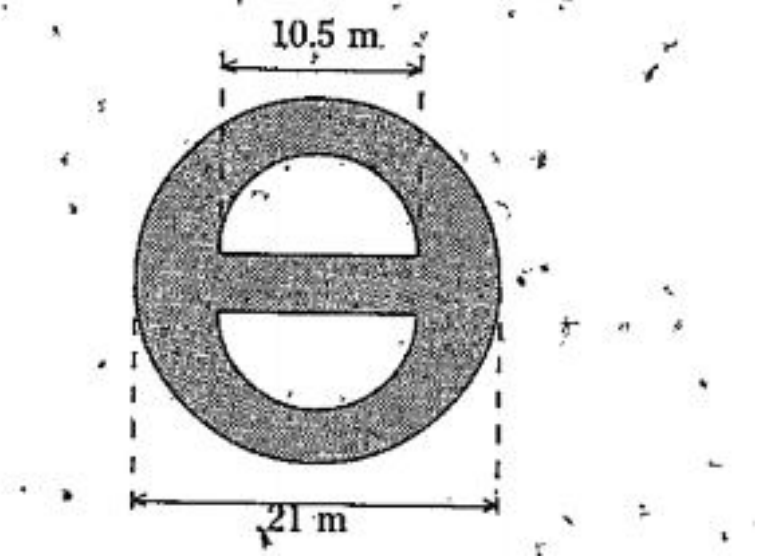
39. Find the area of the shaded region in each of the following figures.



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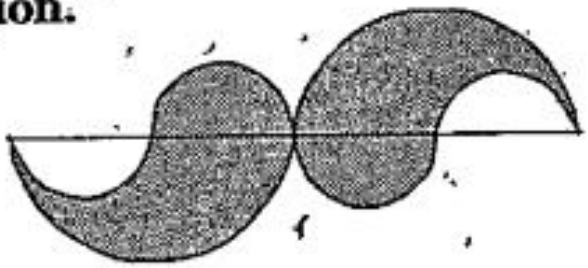
40. The given figure consists of four small semi-circles of equal radii and two big semi-circles of equal radil (each 42 cm). Find the

area of the shaded region.

gion.



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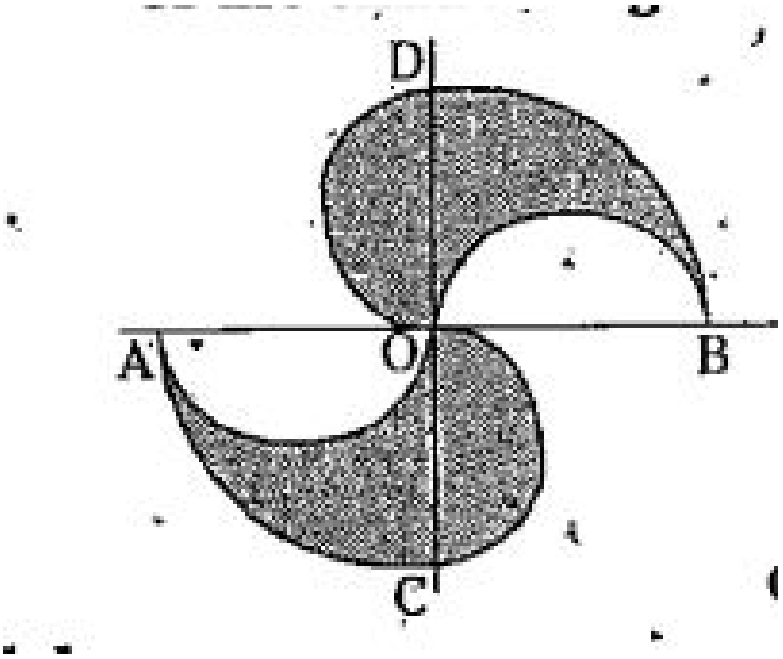
41. The given figure consists of four half circles and two quarter circles. If OA OB=OC=OD=14

cm. Find the area of the shaded region.



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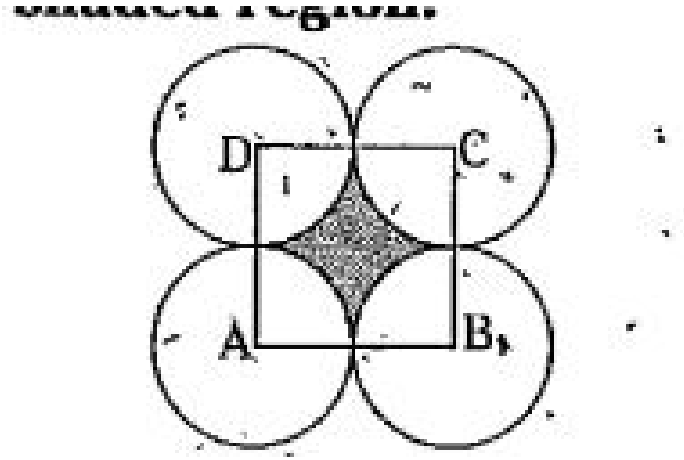
42. In the given figure A, B, C and D are centres of equal circles which touch externally in pairs and ABCD is a square of side 7 cm. Find the

area of the shaded region.



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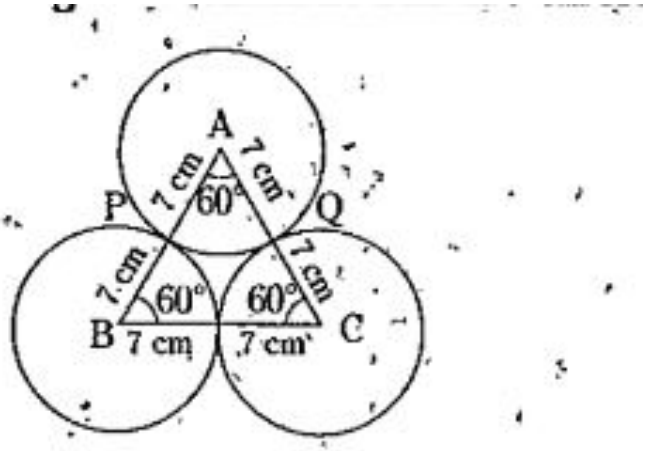
43. The area of an equilateral triangle is $49\sqrt{3}cm^2$. Taking each angular point as centre, a circle is described with radius equal to half the length of the side of the triangle as shown

in the figure. Find the area of the portion in. the triangle not included in the circles.



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44. Four equal circles, each of radius 'a' touch one another. Find the area between them.

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45. Four equal circles are described about the four corners of a square so that each circle touches two of the others. Find the area of the space enclosed between the circumferences of the circles, each side of the square mea suring 24 cm.

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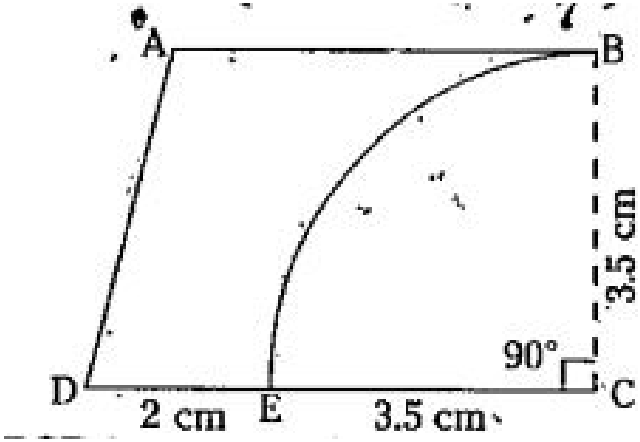
46. From a piece of cardboard, in the shape of a trapezium ABCD and AB || CD and

$\angle BCD = 90^\circ$ quarter circle is removed. Given AB = BC = 3.5 cm and DE=2 cm. Calculate the area of the remaining piece of the cardboard. (Taken π to be $\frac{22}{7}$)



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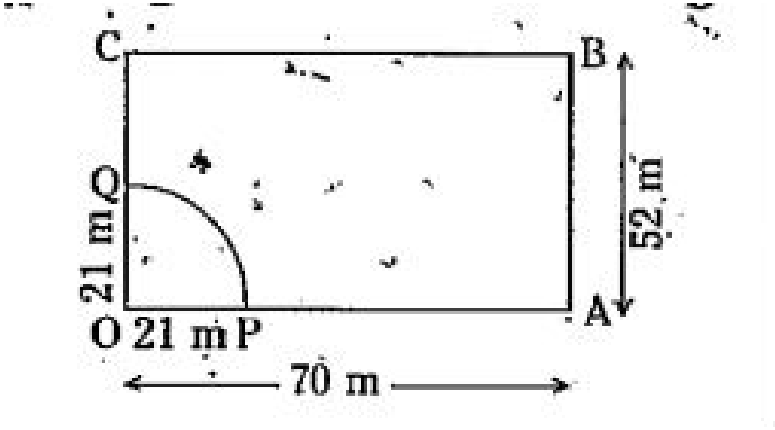
47. A horse is placed for grazing inside a rectangular field 70 m by 52 m and is tethered to one, corner by a rope 21 m long. How much area can it graze?



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48. π=_____

A. $\frac{22}{9}$

B. $\frac{22}{7}$

C. $\frac{21}{91}$

D. $\frac{22}{3}$

Answer:

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49. Circumference of circle=.....

A. $2\pi r$

B. πr

C. $\pi \frac{r}{2}$

D. πr^2

Answer:

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50. Each exterior angle of an equilateral triangle is.....

A. 70°

B. 60°

C. 100°

D. 120°

Answer:

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51. The Number of diagonals of a Quadrilateral is .....

A. 2

B. 4

C. 3

D. 1

Answer:

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52. Area of trapezium = ... Sq.units.

A. $\frac{1}{2}(a+b)$

B. $\frac{1}{2}h(a+b)$

C. $\frac{a+b}{4}$

D. $\frac{1}{4}h(a+b)$

Answer:

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53. Area of circle is ..... Sq . Units .

A. πr

B. 2πr

C. πr^2

D. $\pi \frac{r}{2}$

Answer:

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54. Perimeter of semicircle is ..... Units .

A. πr^2

B. $\frac{\pi}{r}$

C. r+π

D. πr

Answer:

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55. Area of sector = ...

A. lr

B. $\frac{lr}{2}$

C. $l + \frac{r}{2}$

D. $\frac{l}{2}$

Answer:

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56. Central angle of circle is_____

A. 160^@`

B. 90°

C. 360°

D. 180°

Answer:

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57. Diameter of a circle is 8.2 cm then its radius is _____cm.

A. 4.5

B. 5.4

C. 4.1

D. 3.2

Answer:

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58. Sum of the 3 angles in a triangle is _____

A. 130°

B. 170°

C. 160°

D. 180°

Answer:

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59. Side of a square is 7 cm then its area is__

A. 49

B. 60

C. 80

D. 94

Answer:

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60. Area of the triangle is_____

A. a+b

B. $\frac{1}{2}b + h$

C. $\frac{1}{2}bh$

D. bh

Answer:

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61. Area of parallelogram is_____

A. bh

B. $\frac{1}{2}bh$

C. $\frac{1}{2}a+b$

D. $\frac{ab}{4}$

Answer:

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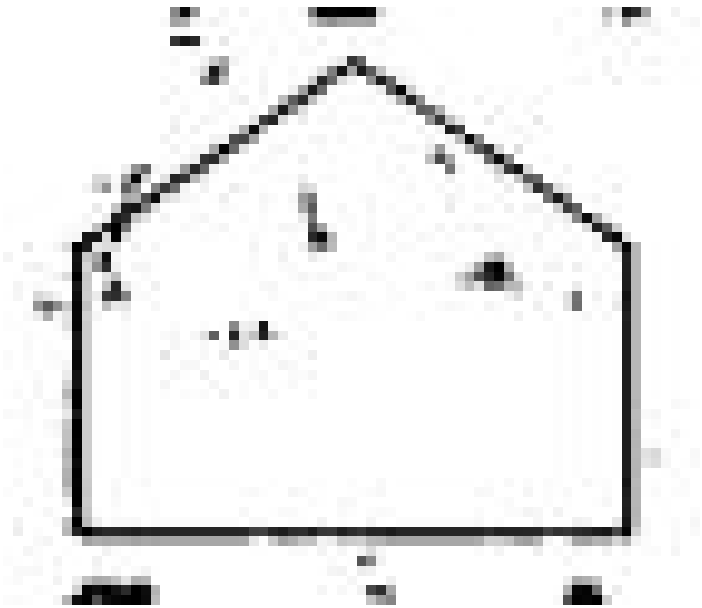
62. Number of triangles in the figure is__



A. 7

B. 2

C. 4

D. 3

Answer:

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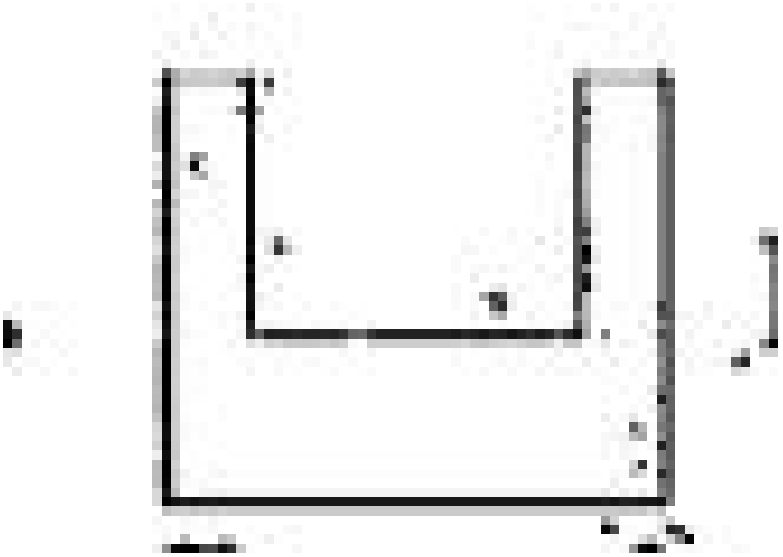
63. Number of rectangles in the figure is_



A. 3

B. 4

C. 5

D. 6

Answer:

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64. In a circle d = 28 cm then A=____cm^2

A. 216

B. 161

C. 606

D. 616

Answer:

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65. In a Quadrilateral d_1 6 cm, h_1 = 5 cm, h_2=3 cm then A =_____cm^2

A. 60

B. 20

C. 80

D. 40

Answer:

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66. Area of Rhombus is_____

A. 16

B. 18

C. 24

D. 19

Answer:

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67. Area of A Rhombus = ...

A. $\frac{1}{2}d_1d_2$

B. $\frac{d_1d_2}{4}$

C. $\frac{1}{2}d_1\frac{d_2}{3}$

D. $d_1^2.\ d_2^2$

Answer:

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68. In a Rectangle l=20 cm, b=14 cm then A=_____cm^2

A. 150

B. 170

C. 180

D. 280

Answer:

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69. Area of sector = ...

A. 150

B. 170

C. 180

D. 280

Answer:

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70. Area of square is 1225 cm^2 then its side its _____cm.

A. 25

B. 15

C. 45

D. 35

Answer:

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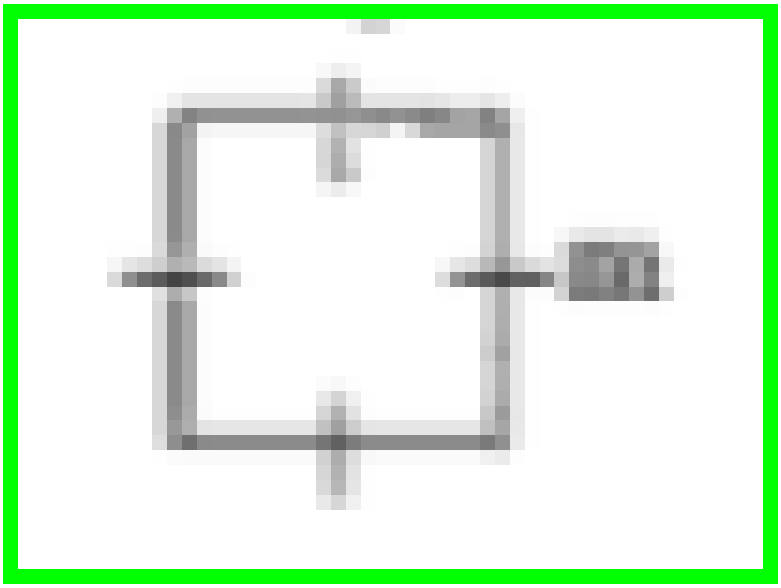
71. area of adjacent figure .....sq.cm.



A. 25

B. 15

C. 45

D. 35

Answer:

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72. Area of parallelogram is 50 cm^2 and a base is 10 then what is the height.

A. 5

B. 10

C. 74

D. 93

Answer:

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73. a rectangle 0f length8cm and bredth5cm.A diagonal is drawn to it, then the area of triangle so formed is _____cm^2.

A. 20

B. 16

C. 25

D. 15

Answer:

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74. In the figure area of Right angle triangle ABC=_____ cm^2.

A. 10

B. 8

C. 12

D. 6

Answer:

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75. Diagonals of a Rhombus are 6 cm and 7cm then area=_____cm^2.

A. 19

B. 16

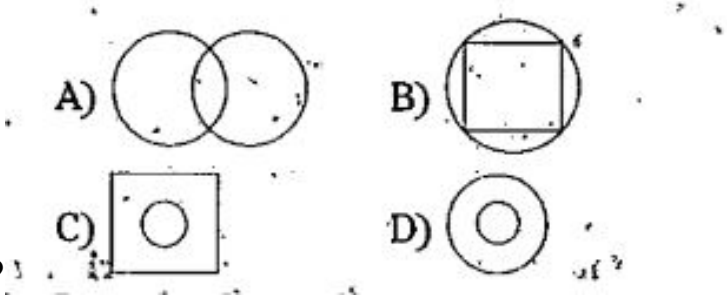
C. 13

D. 21

Answer:

Watch Video Solution

76. Which of the following figure represents a sector?



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77. In a circle r =14 cm then area of Quadrant circle is_____cm^2.

A. 164

B. 154

C. 110

D. 150

Answer:

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78. Area of ring is_____cm^2

A. $\pi(R-r)$

B. π(R+r)

C. $\pi\left(R^2-r^2\right)$

D. πR^2-r^2

Answer:

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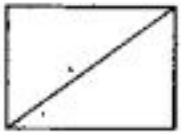
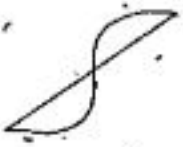
79. Which of the following figure represents concentric circles?

A) 

B) 

C) 

D) 

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80. Length of arc of a sector is 16 cm and radius of a circle is 7 cm the area of sector is_____cm^2

A. 56

B. 46

C. 16

D. 36

Answer:

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81. Length of arc of a sector is_____

A. $\frac{x^{\circ}}{360^{\circ}} \times 2\pi r$

B. $\frac{x^{\circ}}{360^{\circ}} \times \pi r$

C. $\frac{x^{\circ}}{180^{\circ}} \times \pi r^2$

D. None

Answer:

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82. In a triangle b=5 cm, h =10 cm then area is_____cm^2

A. 19

B. 15

C. 25

D. 20

Answer:

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83. In a Rhombus the diagonals are 2a and 4b units then its area is_____ square units.

A. 2ab

B. 4ab

C. 3ab

D. ab

Answer:

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84. In a circle d = 7 cm then its area is_____ cm^2

A. 10

B. 6

C. 18

D. None

Answer:

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85. In a Ring the radii of outer and inner are15 cm and 8cm cm then the area is____cm.

A. 7

B. 563

C. 506

D. 167

Answer:

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86. The side of an equilateral triangle is 'a' units then. its area is_____ square units.

A. $\frac{\sqrt{3}}{4}a^2$

B. $\frac{\sqrt{3}}{2}a$

C. $\frac{\sqrt{3}}{7}a^2$

D. $\frac{\sqrt{3}}{6}a^2$

Answer:

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87. The side of an equilateral triangle is 'a' units . Its height is.....units.

A. $\frac{\sqrt{3}}{4}a$

B. $\frac{\sqrt{3}}{2}a$

C. $\frac{\sqrt{3}}{4}a^2$

D. $\frac{2}{\sqrt{3}a}$

Answer:

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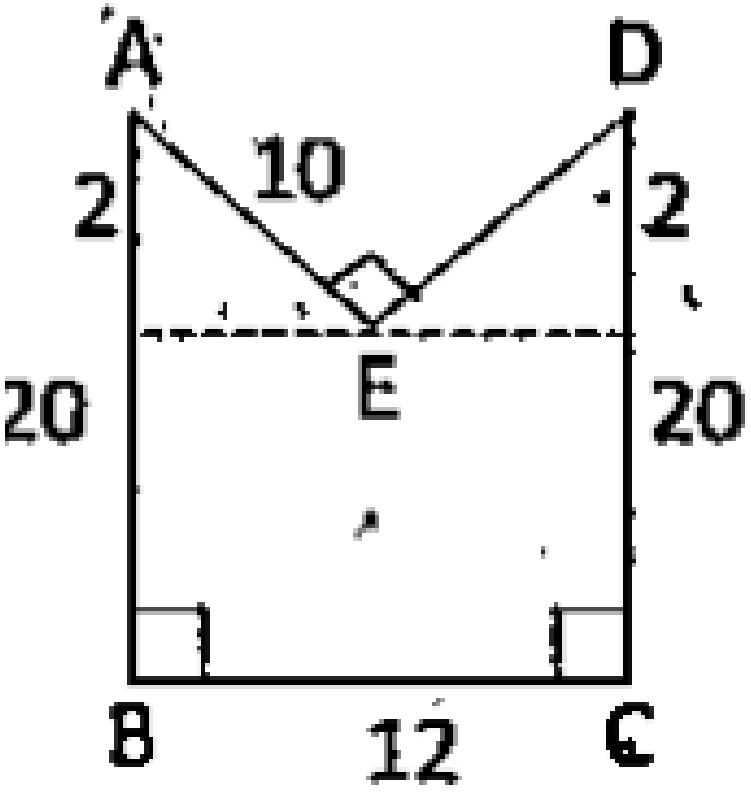
88. The area of adjacent figure is____cm^2



A. 213

B. 103

C. 252

D. 203

Answer:

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89. Diagonal of a square is $9\sqrt{2}$cm then its area is_____cm^2

A. 90

B. 70

C. 37

D. 81

Answer:

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90. Diagonal of a square is 2.8 cm then its area is_____cm^2

A. 2.95

B. 3.92

C. 8.9

D. 5.3

Answer:

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91. $1cm^2$=_____mm^2

A. 10

B. 2000

C. 1000

D. 100

Answer:

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92. 1 hectare=_____m^2

A. 10000

B. 2000

C. 3000

D. 1000

Answer:

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93. Area of triangle = $600cm^2$, height = 15cm then its base =_____cm.

A. 19

B. 16

C. 80

D. 10

Answer:

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94. Area of triangle is 120 cm^2 and its base is 15 cm then its height is_____cm.

A. 16

B. 26

C. 36

D. 10

Answer:

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95. Area of Rhombus is 96 cm^2 and its diagonal is 16 cm then its height is __cm.

A. 60

B. 40

C. 10

D. 30

Answer:

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96. In a parallelogram the base is double the height and the area is 512 cm^2 then its base is_____cm.

A. 19

B. 13

C. 16

D. 32

Answer:

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97. In the above problem height=___cm.

A. 19

B. 16

C. 23

D. 11

Answer:

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98. Perimeter of a Rhombus is 56 cm then the length of its side is_____cm.

A. 17

B. 16

C. 23

D. 19

Answer:

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99. Radius of a circle is 4.9 cm then its area is_____cm^2.

A. 64.35

B. 95.35

C. 75.46

D. 15.46

Answer:

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100. Area of one circle is 100 times the area of other circle then the ratio of their circumferences is_____

A. 0.043055555555556

B. 10:1

C. 0.055555555555556

D. 15:1

Answer:

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101. The area of adjacent Trapezium is_____cm^2.

A. 35

B. 16

C. 80

D. 55

Answer:

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102. Area of circle is 616 cm^2 then its circumference is_____cm.

A. 45

B. 50

C. 88

D. 70

Answer:

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103. The area of shaded region in the adjacent figure is _____ cm^2.

A. 88

B. 63

C. 19

D. 81

Answer:

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104. Circumference of circle is 264 cm then its area is _____cm^2

A. 104

B. 114

C. 154

D. 164

Answer:

Watch Video Solution

105. The height of an equilateral triangle is $\sqrt{6}$ cm then its area is____cm^2.

A. 4.6

B. 5.6

C. 3.46

D. 8.56

Answer:

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106. Area of square is 200 cm^2 then its diagonal is_____cm.

A. 20

B. $3\sqrt{2}$

C. $10\sqrt{3}$

D. $9\sqrt{2}$

Answer:

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107. The difference of a circumference of a circle and the radius is 37 cm then its area is_____cm^2.

A. 180

B. 130

C. 154

D. 101

Answer:

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108. Area of circle is 1386 cm^2 then its circumference is_____cm.

A. 123

B. 169

C. 132

D. 119

Answer:

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109. Area of rectangle is 100 cm^2, length is 20 cm then its breadth =_____cm.

A. 16

B. 9

C. 10

D. 5

Answer:

Watch Video Solution

110. The side of a square is 9 cm then its perimeter is_____cm.

A. 16

B. 9

C. 10

D. 5

Answer:

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111. Diagonal of a rectangle is_____

A. 32

B. 10

C. 36

D. 16

Answer:

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112. In the adjacent figure(pic)x=____cm.

A. $\sqrt{l^2 + b^2}$

B. l+$\sqrt{b}$

C. $\sqrt{l}$+b

D. l+b

Answer:

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