

HERONS FORMULA

Class :- IX

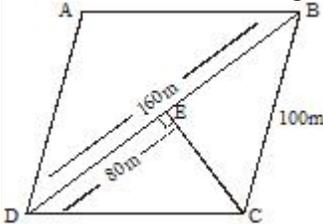
Subject :- Math

General Instructions

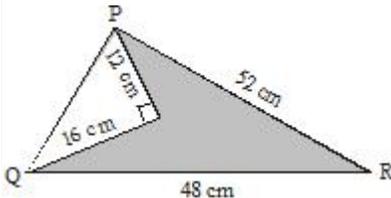
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Questions

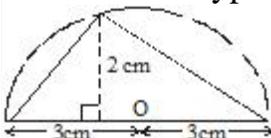
- 1 Find the area of rhombus shaped field of adjoining figure and also find the cost of fencing all sides shown in figure by the rate of Rs. 50/m².



- 2 One side of an equilateral triangle measures 8cm. Find its area using Hero's formula. What is its altitude?
- 3 The area of an equilateral triangle is $2\sqrt{3}$ cm². Find its perimeter.
- 4 The sides of triangular plate are 8cm, 15cm and 17cm. If its weight is 96 gram, find the weight of the plate per square cm.
- 5 The sides of a triangle are in the ratio of 13:14:15 and its perimeter is 84 cm. Find the area of the triangle.
- 6 A triangle has sides 35cm, 54cm and 61 cm long. Find its area. Also find the smallest altitude.
- 7 The perimeter of a square A is $(4x + 20)$ cm. Find its diagonal.
- 8 The diagonals of a rhombus are 15cm and 36cm long. Find its perimeter
- 9 If each side of an equilateral triangle is increased by 2cm, then its area increases by $3\sqrt{3}$ cm². Find the length of each side and its area.
- 10 A right triangle has hypotenuse of length qcm and one side of length pcm. If $q - p = 2$ cm, express the length of the third side of the right triangle in terms of q.
- 11 Calculate the area of the shaded portion of the D as shown is the figure.



- 12 Find the area of a right angled triangle if the radius of its circumcircle is 3cm and altitude drawn to the hypotenuse is 2cm.



- 13 The length of the sides forming right angle of right angled triangle are $5x$ cm and $(3x-1)$

cm. If the area of the triangle is 60 cm^2 , find its hypotenuse.

14 Find the perimeter of an isosceles right angled triangle having area 200 cm^2

15 If the lengths of the diagonals of a rhombus are $a + b$ and $a - b$, what is the area of the rhombus?

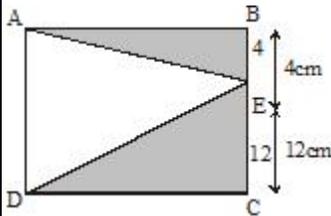
16 Find the height of the trapezium if the lengths of the two parallel sides are 12cm, and 14cm and the area of the trapezium is 143 cm^2

17 The diagonal of a four sided field is 44cm. The perpendiculars from the opposite vertices on this diagonal are 20m and 15m. find the area of the field.

18 Find the area of quadrilateral whose sides are 60m, 11m 15m and 52m respectively and the angle between the first two sides is a right angle.

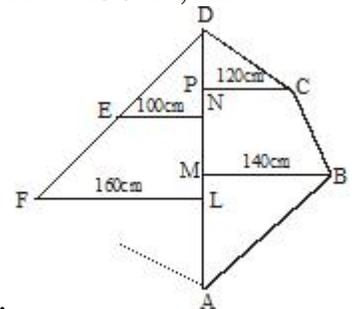
19 The sum of the lengths of the diagonals of square is $32\sqrt{2}$ cm, find its perimeter.

20 Find the area of shaded portion in the figure, if ABCD in a square.



21 The perimeter of a right a triangle is 60cm. Its hypotenuse is 26cm. Find the other two sides and the area of the triangle.

22 In the given figure, ABCDEF is a hexagon. AD is diagonal and BM, CP, EN and FL are the respective distances of the points B,C, E and F from AD. If $AD = 250\text{cm}$, $AN =$



360cm and $AP = 400\text{cm}$, find the area of the hexagon ABCDEF.

23 The base and altitude of parallelogram are respectively 12 cm and 18cm, and the area of parallelogram is equal to the area of a triangle whose base is 54 cm. find the height of the triangle.

24 One side of a right triangle measures 126m and the difference in lengths of its hypotenuse and other side is 42m. Find the measure of its two unknown sides and calculate its area. Verify. the result using Heron's formula

25 Find the area of a triangle, whose sides are 26 cm, 28 cm and 30 cm respectively.

26 The unequal side of an isosceles triangle is 6 cm and its perimeter is 24 cm. Find its area.

27 Find the area of a triangle whose two sides are 195 m and 180 m and the perimeter is 450 m.

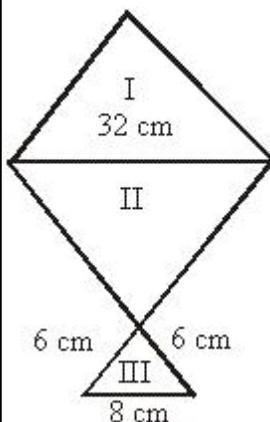
28 Using Heron's formula, find the area of an equilateral triangle with side 16 cm.

29 The sides of a triangular ground are 5 m, 7 m and 8 m respectively. Find the cost of levelling the ground at the rate of Rs. 10 per m^2 . (use $\sqrt{3} = 1.73$)

30 The perimeter of a triangular field is 300 cm and its sides are in the ratio 5 : 12 : 13. Find

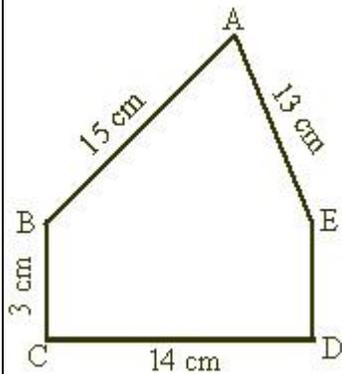
the length of the perpendicular from the opposite vertex to the side whose length is 130 cm.

- 31 A triangular park has sides 120 m, 80 m and 50 m. A gardener has to put a fence all around it and also plant grass inside. How much area does he need to plant? Find the cost of fencing it with barded wire at the rate of Rs 20 per metre leaving space 3 m wide for a gate on one side.
- 32 A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30 m and its longer diagonal is 48 m, how much area of grass field will each cow be getting?
- 33 The adjacent sides of parallelogram are 26 cm and 28 cm and one of its diagonal is 30 cm. Find the area of parallelogram.
- 34 Find the area of a triangular field whose sides are 200 cm, 150 cm and 120 cm.
- 35 Find the area of a triangular park, two sides of which are 18 m and 10 m and the perimeter is 42 m.
- 36 An isosceles triangle has perimeter 30 cm and each of the equal sides is 12 cm. Find area of the triangle.
- 37 Find the area of $\triangle ABC$ in which $\angle ABC = 90^\circ$, $\angle ACB = 45^\circ$ and $AC = 8$ cm.
- 38 The sides of a triangular plot are in the ratio 3 : 5 : 7 and the perimeter is 300 m. Find its area.
- 39 The perimeter of a triangular ground is 900 m and its sides are in the ratio 3 : 5 : 4. Using Heron's formula, find the area of the ground.
- 40 A traffic signal board, indicating 'SCHOOL AHEAD', is an equilateral triangle with side 'a'. Find the area of the signal board, using Heron's formula. If its perimeter is 180 cm, what will be the area of the signal board?
- 41 Find the area of a quadrilateral ABCD in which $AB = 5$ cm, $BC = 12$ cm, $CD = 10$ cm, $AD = 13$ cm and $AC = 13$ cm.
- 42 Divyanshi has made a kite in the shape of a square with diagonal 32 cm and an isosceles triangle of base 8 cm and side 6 cm. Each is to be made of three different shades as shown in figure. How much paper of each shade has been used by Divyanshi.



- 43 The perimeter of a triangular held is 300 cm and its sides are in the ratio 5 : 12 : 13. Find the length of the perpendicular from the opposite vertex to the side whose length is 130 cm.

- 44 A municipal corporation wall on roadside has dimensions as shown in given figure. The wall is to be used for advertisements and it yields an earning of Rs 660 per m^2 in a year. Find the total amount of revenue earned in a year.



- 45 A triangle and a parallelogram have the same base and the same area. If the sides of the triangle are 26 cm, 28 cm and 30 cm, and the parallelogram stands on the base 28 cm, find the height of the parallelogram.
- 46 OPQR is a rhombus whose three vertices P, Q, R lie on a circle with centre O. If the radius of the circle is 12 cm. Find the area of the rhombus.
- 47 A field is in the shape of a trapezium whose parallel sides are 25 m and 10 m. The non-parallel sides are 14 m and 13 m. Find the area of the field.
- 48 A park, in the shape of a quadrilateral ABCD, has $\angle C = 90^\circ$, $AB = 9$ m, $BC = 12$ m, $CD = 5$ m and $AD = 8$ m. How much area does it occupy?
- 49 A field is in the shape of a trapezium whose parallel sides are 25 m and 10 m. The non-parallel sides are 14 m and 13 m. Find the area of the field.
- 50 The sides of a triangular park are 8 m, 10 m and 6 m respectively. A small circular area of diameter 2 m is to be left out and the remaining area is to be used for growing roses. How much area is used for growing roses? (Use $\pi = 3.14$)