MATHS

NCERT - NCERT MATHEMATICS(ENGLISH)

HERONS FORMULA

Exercise 12 2

1. A kite in the shape of a square with a diagonal $32cm$ and an isosceles triangle of base $8cm\ and\ sides\ 6cm$ each is to be made of three different shades as shown in Figure. How much paper of each shade has been used in it?

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2. A floral design on the floor of a building consists of 280 tiles. Each tile is in the shape of a parallelogram of altitude 3 cm and base 5 cm. Find the cost of polishing the design at the rate of 50 paise per cm^2 .

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3. A field is in the shape of a trapezium whose parallel sides are 25m and 10 m. The non-parallel sides are 14m and 13m. Find the area of the field.

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4. 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?

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5. Find the area of a quadrilateral ABCD in which $AB = 3\,cm,\ BC = 4\,cm,\ CD = 4\,cm,\ DA = 5\,cm\ and\ AC = 5\,cm$

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6. Radha made a picture of an aeroplane with coloured paper as shown in Fig 12.15. Find the total area of the paper used.

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7. 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.

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8. A park, in the shape of a quadrilateral ABCD, has $\angle C = 90^o,\ AB = 9m,\ BC = 12m,\ CD = 5m and\ AD = 8m.$ How much area does it occupy?

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9. An umbrella is made by stitching 10 triangular pieces of cloth of two different colour, each piece measuring 20 cm, 50 cm and 50 cm. How much cloth of each colour is required for the umbrella?

A. $1000\sqrt{6}$

B. $2000\sqrt{6}$

C. $2500\sqrt{6}$

D. $1500\sqrt{6}$

Answer: A

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Exercise 12 1

1. 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?

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2. There is a slide in a park. One of its side walls has been painted in some colour with a message "KEEP THE PARK GREEN AND CLEAN". If the sides of the wall are 15 m, 11 m and 6 m, find the area painted in colour.

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3. The triangular side walls of a flyover have been used for advertisements. The sides of the walls are 122 m, 22 m and 120 m. The advertisements yield an earning of $Rs\ 5000\ per\ m^2\ per\ year$. A company hired one of its wall for 3 months.How much rent did it pay?

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4. Sides of a triangle are in the ratio of $12:17:25$ and its perimeter is 540 cm. Find its area.

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5. Find the area of a triangle two sides of which are 18cm and 10cm and the perimeter is 42cm.

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6. An isosceles triangle has perimeter $30\ cm$ and each of the equal sides of $12\ cm$. Find the area of the triangle.

A. $8\sqrt{15}cm^2$

B. $7\sqrt{15}cm^2$

C. $9\sqrt{15}cm^2$

D. $4\sqrt{15}cm^2$

Answer: C

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Solved Examples

1. A triangular park ABC has sides 120m, 80m and 50m. A gardener Dhania has to put a fence all around it and also plant grass inside. How much area does she need to plant? Find the cost of fencing it with barbed wire at the rate of Rs 20 per metre leaving a space 3m wide for a gate on one side.

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2. The sides of a triangular plot are in the ratio of $3:5:7$and its perimeteris 300 m. Find its area.

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3. Find the area of a triangle, two sides of which are 8 cm and 11 cm andthe perimeter is 32 cm

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4. Sanya has a piece of land which is in the shape of a rhombus. She wants her one daughter and one son to work on the land and produce different crops to suffice the needs of their family. She divided the land in two equals parts. If the perimeter of the land is $400m$ and one of the diagonals is $160m,$ how much area each of them will get?

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5. Kamla has a triangular field with sides 240 m, 200 m, 360 m, where she grew wheat. In another triangular field with sides 240 m, 320 m, 400 m adjacent to the previous field, she wanted to grow potatoes and onions. She divided the field in two par

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6. Students of a school staged a rally for cleanliness campaign. They walked through the lanes in two groups. One group walked through the lanes AB, BC and CA; while the other through AC, CD and DA (see Fig. 12.12). Then they cleaned the area enclos

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