MATHS

BOOKS - SWAN PUBLICATION

HERON'S FORMULA

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?

2. 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 (see Fig. 12.9). The advertisements yield an earning of ₹ 5000 per m^2 per year. A company hired one of its
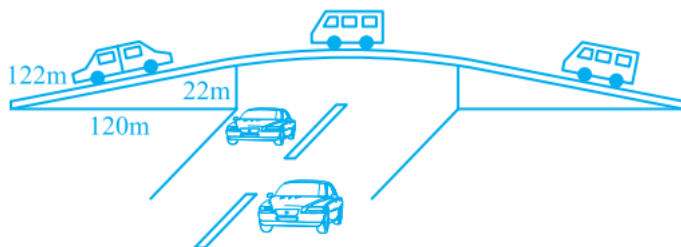
walls for 3 months. How much rent did it pay?

122m
22m
120m

Fig. 12.9

3. There is slide in a park. One of its side walls

has been painted in some colour with a

message

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

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

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6. An isosceles triangle has perimeter 30 cm and each of equal sides is 12 cm. Area of the triangle is :

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EXERCISE 12.2

1. A park, in the shape of a quadrilateral ABCD, has $\angle C = 90°$,

$$AB = 9m, BC = 12m, CD = 5m \qquad \text{and}$$
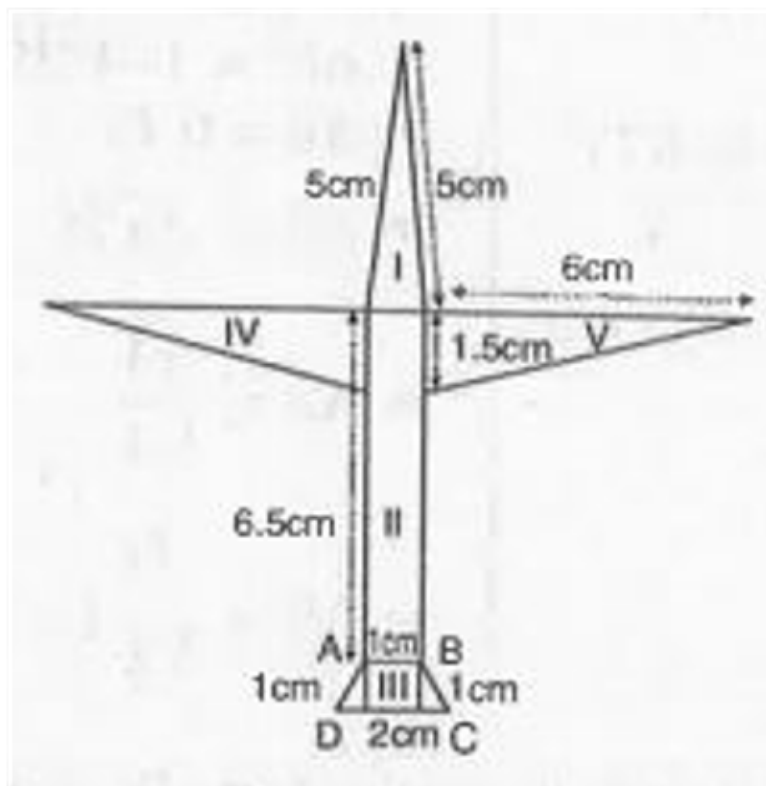
$$AD = 8m.$$ How much area does it occupy ?

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2. 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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3. Radha made a picture of an aeroplane with coloured paper as shown in Fig.

Find the total area of the paper used.

4. 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.
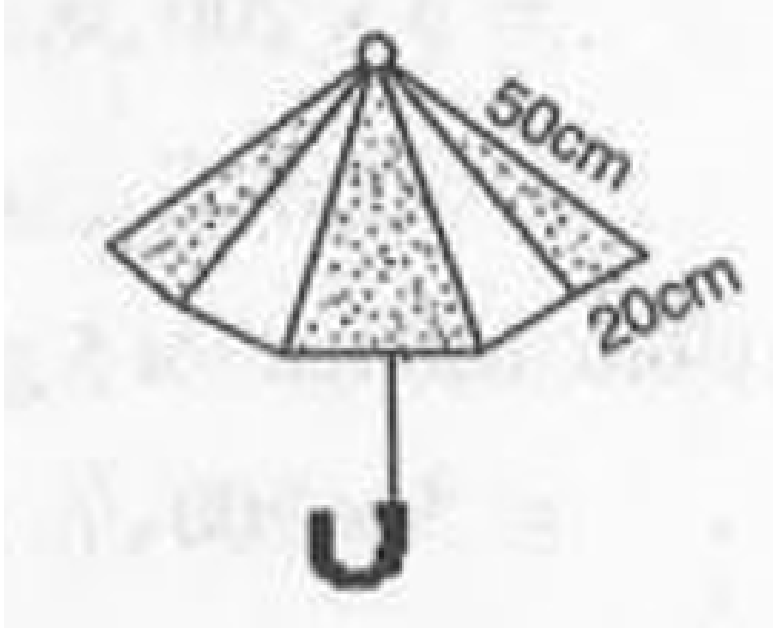
5. A rhombus shaped field has green grass for 18 cows to graze. If each side of the rhombus is 30m and its longer diagonal is 48m, grass of

how much area of grass field will each cow be getting ?
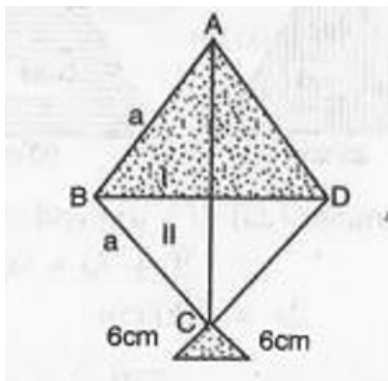
6. An umbrella is made by stitching 10 triangular pieces of cloth of two different colours (See Fig.

)

each piece measuring 20 cm, 50 cm and 50 cm. How much cloth of each colour is required for the umbrella ?

7. A kite is 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 Fig.
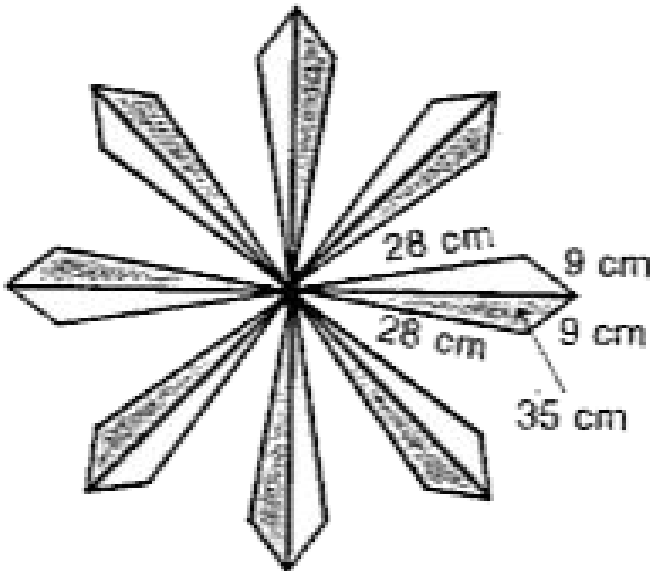

How much paper of each side has been used in it ?

8. A floral design on a floor is made up of 16 tiles which are triangular , the sides of the triangle being 9 cm , 28 cm and 35 cm (See figure). Find the cost of polishing the tiles at the rate of 50 p per cm^2 .

28 cm

9 cm

28 cm

9 cm

35 cm

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

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1. If a, b and c are three sides of a triangle, then what is the perimeter of triangle?

2. If a be the length of a side of an equilateral triangle then what is the formula for its area.

3. Find the area of a triangle whose height is 6cm and base is 10 cm.

4. Find the area of an equilateral triangle whose one side is 5cm.

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5. The sides of a triangle are 3cm, 4cm and 5cm. Find its area.

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6. Write the formula for calculating the area of triangle when its base and corresponding altitude is given.

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7. If a, b and c are the sides of the triangle then what will be its semi-perimeter.

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8. In case if height is not known and all three sides of triangle are given. How will you find the area of triangle.

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9. Find the area of a right triangle whose one side is 7cm and hypotenuse is 25 cm.

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10. Find the arca of a right triangle in which the sides containing right angle measure 20cm and 15cm.

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11. Find the area of an equilateral triangle whose perimeter is 60cm. (By using formula)

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12. The base of an isosceles triangle is 10cm and one of its equal sides is 13cm. Find its area using Hero's formula.

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

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1. Area of triangle $= \dfrac{1}{2} \times$ .... $\times$ altitude.

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2. If a, b and c are the three sides of triangle. Then $s = \dfrac{a + b + c}{2}$. Here s is called ....

.

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3. Area of an equilateral triangle $= \dfrac{\sqrt{3}}{4} \times$

....

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4. Area of triangle

$= \sqrt{\ldots\ldots\ldots(s-a)(s-b)(s-c)}$

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