Choose the correct answer from the given four options (3 to 10) :

3. An isosceles right triangle has area 8 cm^2. The length of its hypotenuse is

   (*a*) $\sqrt{32}$ cm (*b*) $\sqrt{16}$ cm (*c*) $\sqrt{48}$ cm (*d*) $\sqrt{24}$ cm

4. If the perimeter of an equilateral triangle is 60 m, then the area is

   (*a*) $10\sqrt{3}$ m^2 (*b*) $15\sqrt{3}$ m^2 (*c*) $20\sqrt{3}$ m^2 (*d*) $100\sqrt{3}$ m^2

5. The length of each side of an equilateral triangle having area of $9\sqrt{3}$ cm^2 is

   (*a*) 8 cm (*b*) 36 cm (*c*) 4 cm (*d*) 6 cm

6. If the area of equilateral triangle is $16\sqrt{3}$ cm^2, then the perimeter of the triangle is

   (*a*) 48 cm (*b*) 24 cm (*c*) 12 cm (*d*) 36 cm

7. If the sides of a parallelogram are 9 cm and 4 cm, then the ratio of their corresponding altitudes is

   (*a*) 2 : 3 (*b*) 3 : 2 (*c*) 9 : 4 (*d*) 4 : 9

8. If the perimeter of a rhombus is 80 cm and one of its diagonals is 24 cm, then the length of the other diagonal is

   (*a*) 16 cm (*b*) 20 cm (*c*) 32 cm (*d*) 48 cm

9. If the sides of a triangle are 56 cm, 60 cm and 52 cm long, then the area of the triangle is

   (*a*) 1322 cm^2 (*b*) 1311 cm^2 (*c*) 1344 cm^2 (*d*) 1392 cm^2

10. Two adjacent sides of a parallelogram are 9 cm and 8 cm. If one of its diagonal is 13 cm, then its area is

    (*a*) $24\sqrt{35}$ cm^2 (*b*) $12\sqrt{35}$ cm^2 (*c*) $6\sqrt{35}$ cm^2 (*d*) 150 cm^2

1. Fill in the blanks :

(*i*) If side of an equilateral triangle is a, then its altitude is ..... .

(*ii*) If the sides of a triangle are a, b and c and its semi-perimeter is s, then the area of the triangle is ..... .

(*iii*) The area of a rhombus = $\frac{1}{2}$ × product of its ..... .

(*iv*) The area of a parallelogram = base × ..... .

(*v*) The area of a triangle = $\frac{1}{2}$ × base × ..... .

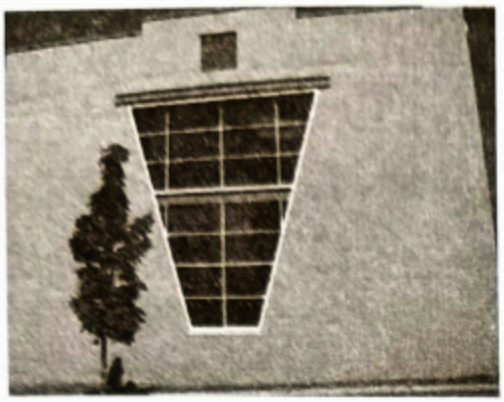
(*vi*) The area of the triangular park whose sides are of length 50 m, 80 m and 120 m is ..... .

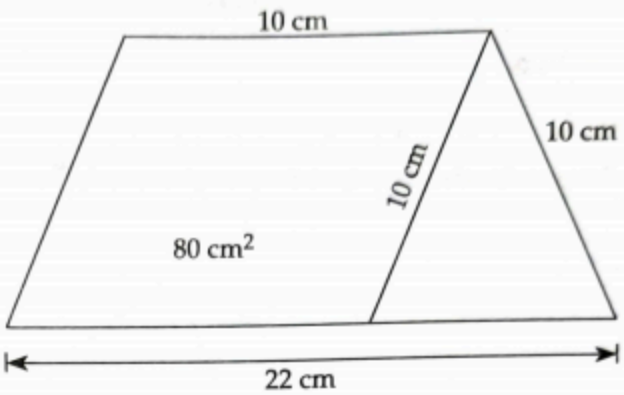
2. State whether the following statements are true or false :

(*i*) A diagonal of a parallelogram divides it into two congruent triangles of equal area.

(*ii*) A diagonal of a rhombus divides it into two congruent triangles of equal area.

CASE-STUDY 3





With reference to the given figure, answer the following questions:

(*i*) What is the shape of the window?

(*ii*) What's the height of the figure if the area of the parallelogram in the figure is 80 sq. cm?

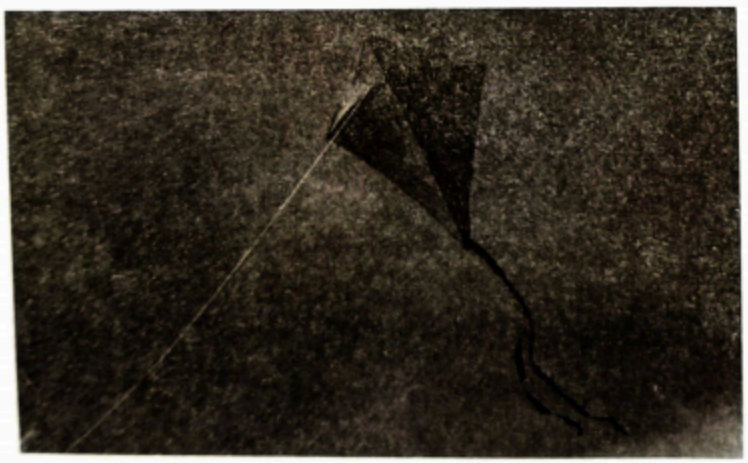
OR

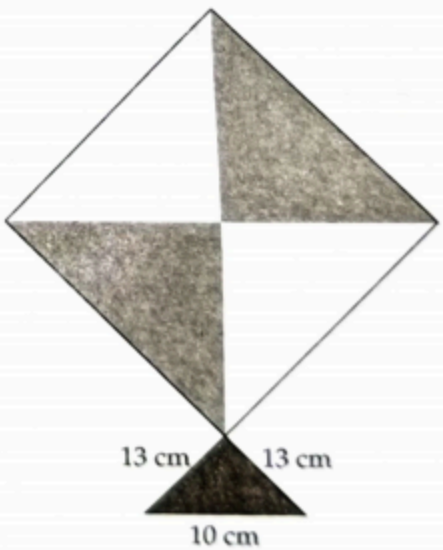
(*ii*) What is the length of the base of the triangle?

(*iii*) Find the area of the trapezium in sq. cm.

CASE-STUDY 4

The earliest written account of kite flying is in China in 200 BC. Supporting China's claim to the origin of the kite, the Chinese General Han Hsin of the Han Dynasty flew a kite over the walls of a city he was attacking to measure how far his army would have to tunnel to reach past the defences.





A black and white kite is composed of a square and an isosceles triangle. A diagonal of the square is 25 cm, whereas the sides of the isosceles triangles are 13 cm, 13 cm and 10 cm.

Based on the above information, answer the following questions:

(*i*) What is the area of the square part?

(*ii*) What is the area of the isosceles triangle?

OR

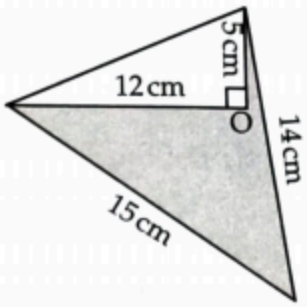
(*ii*) Find the area of the black paper.

(*iii*) Find the perimeter of the kite in cm.

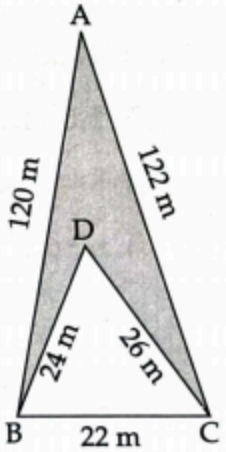
1. The perimeter of a triangular field is 420 m and its sides are in the ratio 6 : 7 : 8. Find the area of the triangular field. *(Exemplar)*

2. The base of an isosceles triangle is 24 cm and its area is 60 cm^2. Find its perimeter (use Heron's formula).

3. (*a*) Find the area of the shaded region in figure (*i*) given below.
   (*b*) Find the area of the shaded region in figure (*ii*) given below. *(Exemplar)*



(*i*)



(*ii*)

4. An umbrella is made by stitching 10 triangular pieces of cloth of two different colours (shown in the adjoining figure), each piece measuring 20 cm, 50 cm and 50 cm. How much cloth of each colour is required for the umbrella?