



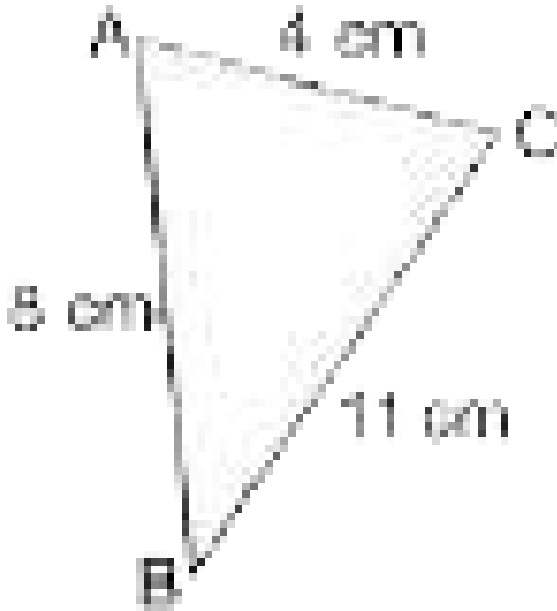
MATHS

BOOKS - HT Olympiad Previous Year Paper

HERON'S FORMULA

Mathematical reasoning

1. In the given figure, the area of the $\triangle ABC$ is



A. 13.24cm^2

B. 12.29cm^2

C. 11.32cm^2

D. 15.37cm^2

Answer: B



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2. The difference between the semi-perimeter and the sides of a $\triangle ABC$ are 7 cm, 5 cm and 3 cm respectively. The perimeter of the triangle is _____

A. 25cm

B. 10cm

C. 15cm

D. 30cm

Answer: D



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3. The perimeter of a triangle is 300 m and its sides are in the ratio 3:5:7. Find its area.

A. $1800\sqrt{3}m^2$

B. $1500\sqrt{3}m^2$

C. $4500m^2$

D. $2500m^2$

Answer: B



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4. The perimeter of an isosceles triangle is 32 cm. The ratio of one of the equal sides to its base is 3:2. Find the area of the triangle.

A. 48cm^2

B. $28\sqrt{3}\text{cm}^2$

C. $32\sqrt{2}\text{cm}^2$

D. 44cm^2

Answer: C



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5. A triangle and a parallelogram have the same base and the same area. If the sides of the triangle are 26cm , 28cm and 30cm , and

the parallelogram stands on the base 28cm ,
find the height of the parallelogram.

A. 15cm

B. 14cm

C. 12cm

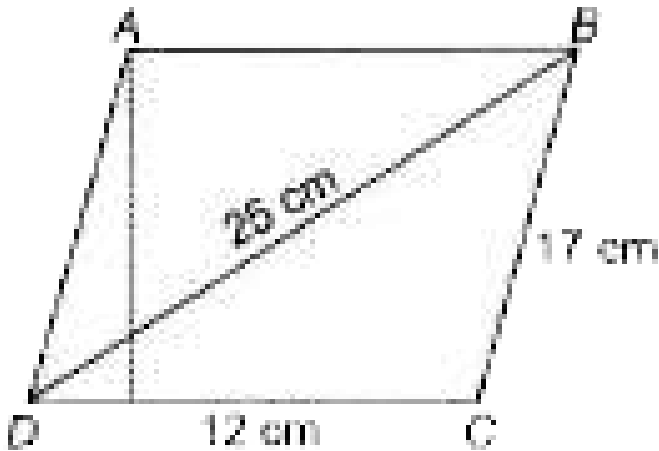
D. 13cm

Answer: C



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6. In the given parallelogram, find the length of the altitude from vertex A on the side DC.



- A. 18cm
- B. 12cm
- C. 15cm

D. 25cm

Answer: C



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7. A rhombus shaped sheet with perimeter 40 cm and one diagonal 12 cm, is painted on both sides at the rate of Rs 5 per cm^2 . Find the cost of painting.

A. Rs 880

B. Rs 1020

C. Rs 960

D. Rs 980

Answer: C



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8. The area of a triangle, two sides of which are 8 cm and 11 cm and the perimeter is 32 cm is $k\sqrt{30}cm^2$. Find the value of k.

A. 8

B. 6

C. 7

D. 9

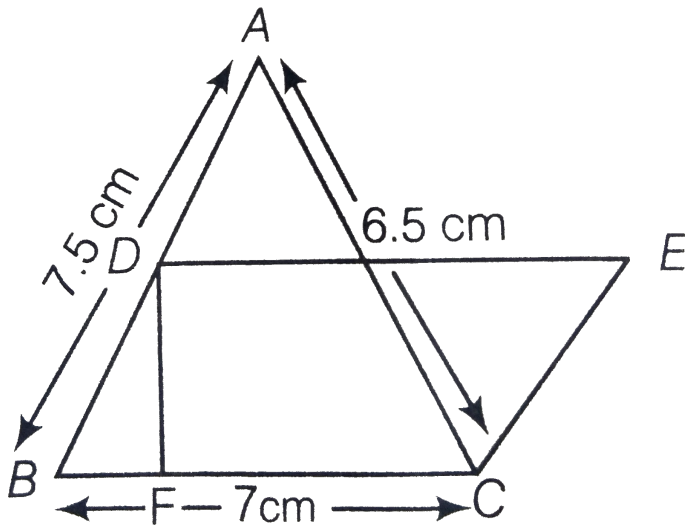
Answer: A



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9. In figure, $\triangle ABC$ has sides $AB=7.5$ cm, $AC = 6.5$ cm and $BC=7$ cm. On base BC a parallelogram $DBCE$ of same area as that of

$\triangle ABC$ is constructed. Find the height DF of the parallelogram.



A. 3 cm

B. 6 cm

C. 4 cm

D. 2 cm

Answer: A



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10. The sides of a triangle are 11 cm, 15 cm and 16 cm. The altitude to the largest side is ____

A. $30\sqrt{7}cm$

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

C. $\frac{15\sqrt{7}}{4}cm$

D. 30cm

Answer: C



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11. A field is in the shape of a trapezium whose parallel sides are 77 cm and 60 cm. The non-parallel sides are 25 cm and 26 cm. Find the area of the field.

A. $1296cm^2$

B. $1804cm^2$

C. $1644cm^2$

D. 1596cm^2

Answer: C



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12. If the sides of a triangular field measure 51 m, 37 m and 20 m, then find the cost of levelling it at Rs 7 per m^2 .

A. Rs 2562

B. Rs 2142

C. Rs 2412

D. Rs 2241

Answer: B



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13. The base of an isosceles triangle measures 24 cm and its area is 192 cm^2 ? Find its perimeter.

A. 64cm

B. 46cm

C. 84cm

D. 54cm

Answer: A

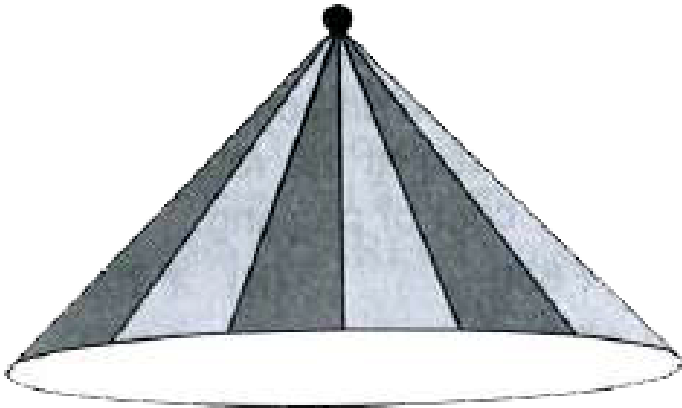


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Everyday Mathematics

1. A conical tent is made by stitching 12 triangular pieces of cloth of two different

colours as shown in the given figure. Each piece measuring 11 m, 11 m and 6 m. How much cloth of each colour is required for the conical tent?



A. $190.5m^2$, $190.5m^2$

B. $200m^2$, $196m^2$

C. $190.5m^2$, $180m^2$

D. $198m^2$, $198m^2$

Answer: A



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2. The perimeter of a field in the form of an equilateral triangle is 36 cm, then its area is given by

A. $98\sqrt{3}cm^2$

B. $8\sqrt{3}cm^2$

C. $42\sqrt{3}cm^2$

D. $36\sqrt{3}cm^2$

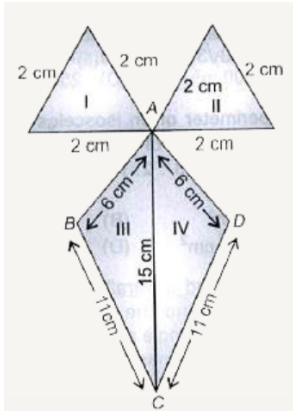
Answer: D



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3. Tanya joined four triangles of cardboard to create a mask of Joker as shown in the given figure. Find the total area of the mask. [Given

$$\sqrt{2} = 1.41, \sqrt{3} = 1.73]$$



A. 60.02cm^2

B. 50cm^2

C. 59cm^2

D. 53cm^2

Answer: A

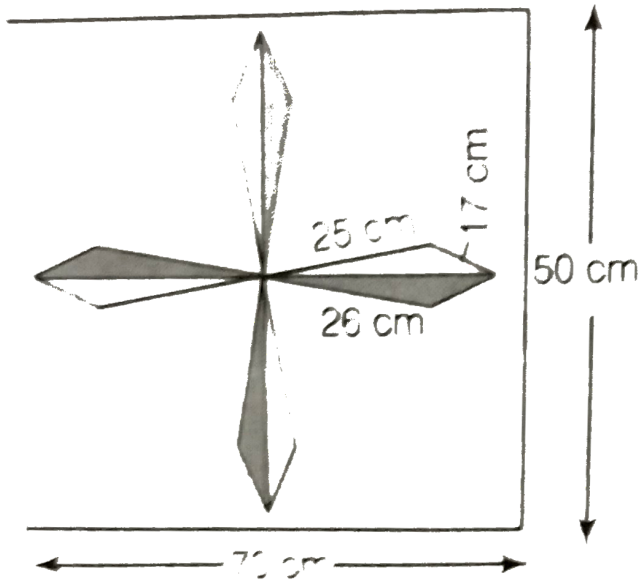


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Achievers Section (HOTS)

1. A design is made on a rectangular tile of dimensions $50\text{ cm} \times 17\text{ cm}$ as shown in figure. The design shows 8 triangle, each of sides 26 cm, 17 cm and 25 cm. Find the total area of the

design and the remaining area of the tiles.



A. 1632cm^2 , 1886cm^2

B. 1538cm^2 , 1632cm^2

C. 1632cm^2 , 1868cm^2

D. 1632cm^2 , 1538cm^2

Answer: C



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2. State 'T' for true and 'F' for false.

(I) The lengths of the three sides of a triangular field are 40 m, 24 m and 32 m respectively. The area of the triangle is 384 m^2 .

(II) The area of a quadrilateral ABCD in which $AB=3 \text{ cm}$, $BC=4 \text{ cm}$, $CD=4 \text{ cm}$, $DA = 5 \text{ cm}$ and $AC = 5 \text{ cm}$ is 18 cm^2 .

(III) An advertisement board is in the form of

an isosceles triangle with its sides equal to 12 m, 10 m and 10 m. The cost of painting it at Rs 2.25 per m^2 is Rs 112.

(IV) Heron's formula cannot be used to calculate area of quadrilaterals.

A. *I II III IV*
T F F T

B. *I II III IV*
F T F F

C. *I II III IV*
T F T F

D. *I II III IV*
T F F F

Answer: D



3. Find the area of quadrilateral ABCD in which
AB = 9 cm, BC = 40 cm, CD = 28 cm, DA = 15 cm
and $\angle ABC = 90^\circ$.

A. 300cm^2

B. 180cm^2

C. 126cm^2

D. 306cm^2

Answer: D



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