HERON'S FORMULA

1. The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m. Find its area.
(a) $4\sqrt{30}$ (b) $8\sqrt{30}$ (c) $12\sqrt{30}$ (d) $16\sqrt{30}$

2. Find the area of a triangle, two sides of which are 8 cm and 11 cm and the perimeter is 32 cm
(a) $1500\sqrt{3}$ (b) $3000\sqrt{3}$ (c) $4500\sqrt{3}$ (d) $6000\sqrt{3}$

3. Find the area of a triangle two sides of which are 18cm and 10cm and the perimeter is 42cm.
(a) $14\sqrt{11}$ (b) $21\sqrt{11}$ (c) $35\sqrt{11}$ (d) $21\sqrt{11}$

4. Sides of a triangle are in the ratio of 12 : 17 : 25 and its perimeter is 540cm. Find its area.
(a) 6000 (b) 9000 (c) 12000 (d) none of these

5. The height corresponding to the longest side of the triangle whose sides are 42 cm, 34 cm and 20 cm in length is
(a) 15 cm (b) 36 cm (c) 16 cm (d) none of these

6. 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?
(a) 56.4 m^2 (b) 55.4 m^2 (c) 65.4 m^2 (d) none of these

7. 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.
(a) 15 cm^2 (b) 15.4 cm^2 (c) 15.2 cm^2 (d) none of these

8. If the area of an equilateral triangle is $81\sqrt{3}$ cm^2, then its height is
(a) $9\sqrt{3}$ (b) $3\sqrt{3}$ (c) $12\sqrt{3}$ (d) none of these

9. 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?
(a) 45 m^2 (b) 48 m^2 (c) 51 m^2 (d) none of these

10. The altitude of a triangular field is one-third of its base. If the cost of sowing the field at Rs 58 per hectare is Rs. 783 then its altitude is
(a) 900 m (b) 600 m (c) 300 m (d) none of these

11. 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.
(a) 12 cm (b) 15 cm (c) 18 cm (d) none of these

12. Area of equilateral triangle of side a unit is
(a) $\frac{\sqrt{3}}{2}a^2$ (b) $\frac{\sqrt{3}}{4}a^2$ (c) $\frac{\sqrt{3}}{2}a$ (d) none of these

HERON'S FORMULA

1. The height of an equilateral triangle is 6 cm, then the area of the triangle is
(a) $15\sqrt{3}$ (b) $3\sqrt{3}$ (c) $12\sqrt{3}$ (d) none of these

2. The area of an isosceles triangle each of whose equal sides is 13 m and whose base is 24 m =
(a) 45 m^2 (b) 48 m^2 (c) 60 m^2 (d) none of these

3. The base of an isosceles triangle is 24 cm and its area is 192 cm^2, then its perimeter is
(a) 64 cm (b) 65 cm (c) 68 cm (d) none of these

4. The difference between the sides at right angles in a right angled triangle is 14 cm. If the area of the triangle is 120 cm^2, then the perimeter of the triangle is
(a) 64 cm (b) 60 cm (c) 68 cm (d) none of these

5. The base of a triangular field is three times its altitudes. If the cost of sowing the field at Rs 58 per hectare is Rs. 783 then its base is
(a) 900 m (b) 600 m (c) 1200 m (d) none of these

6. The length of altitude of a equilateral triangle of side a unit is
(a) $\frac{\sqrt{3}}{2}a^2$ (b) $\frac{\sqrt{3}}{4}a^2$ (c) $\frac{\sqrt{3}}{2}a$ (d) none of these

7. The area of the triangle whose sides are 42 cm, 34 cm and 20 cm in length is
(a) 150 cm^2 (b) 336 cm^2 (c) 300 cm^2 (d) none of these

8. An isosceles triangle has perimeter 30 cm and each of the equal sides is 12 cm. Find the area of the triangle in cm^2 is.
(a) $9\sqrt{15}$ (b) $12\sqrt{15}$ (c) $6\sqrt{15}$ (d) none of these

9. The height corresponding to the longest side of the triangle whose sides are 91 cm, 98 cm and 105 cm in length is
(a) 76.4 cm (b) 78.4 cm (c) 65.4 cm (d) none of these

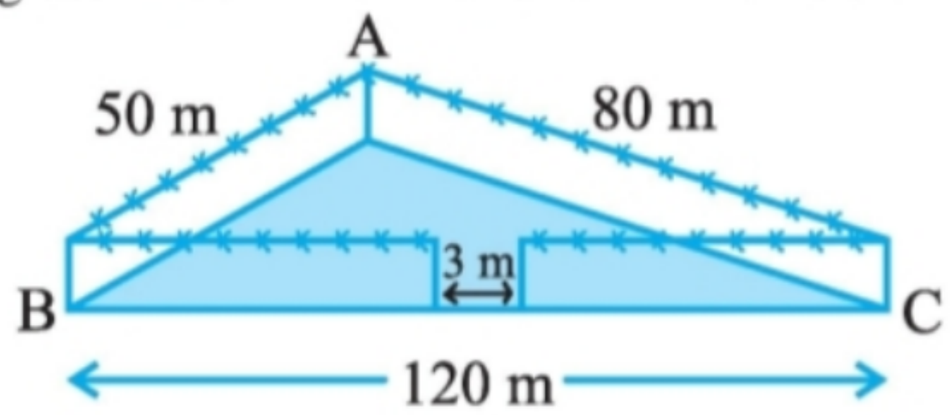
10. If the area of an equilateral triangle is $36\sqrt{3}$ cm^2, then its perimeter is
(a) 64 cm (b) 60 cm (c) 36 cm (d) none of these

11. The base of a right angled triangle is 48 cm and its hypotenuse is 50 cm then its area is
(a) 150 cm^2 (b) 336 cm^2 (c) 300 cm^2 (d) none of these

12. 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.
(a) 89.4 m^2 (b) 89.075 m^2 (c) 89.75 m^2 (d) none of these

HERON'S FORMULA

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 in m^2 does she need to plant?



(a) $9\sqrt{15}$ (b) $12\sqrt{15}$ (c) $6\sqrt{15}$ (d) none of these

2. The sides of a triangle are 35 cm, 54 cm and 61 cm, respectively. The length of its longest altitude:

(a) $16\sqrt{5}$ cm (b) $10\sqrt{5}$ cm (c) $24\sqrt{5}$ cm (d) 28 cm

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

(a) 64 cm (b) 60 cm (c) 36 cm (d) none of these

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

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

5. The area of an equilateral triangle with side is:

(a) 5.196 cm^2 (b) 0.866 cm^2 (c) 3.4896 cm^2 (d) 1.732 cm^2

6. The sides of a triangle are 56 cm, 60 cm and 52 cm, then the area of the triangle is:

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

7. The perimeter of an equilateral triangle is 60 m. The area is:

(a) $15\sqrt{3}$ m^2 (b) $3\sqrt{3}$ m^2 (c) $12\sqrt{3}$ m^2 (d) none of these

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

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

9. A traffic signal board indicating 'SCHOOL AHEAD' is an equilateral triangle with side a, then area of the traffic signal is:

(a) $\frac{\sqrt{3}}{2}a^2$ (b) $\frac{\sqrt{3}}{4}a^2$ (c) $\frac{\sqrt{3}}{2}a$ (d) none of these

10. The base of a triangle is 12 cm and height is 8 cm, then the area of a triangle is:

(a) 24 cm^2 (b) 96 cm^2 (c) 48 cm^2 (d) 56 cm^2

HERON'S FORMULA

1. The sides of a triangle are 3 cm , 4 cm and 5 cm. Its area is
(a) 12 cm^2 (b) 15 cm^2 (c) 6 cm^2 (d) 9 cm^2

2. The area of isosceles triangle whose equal sides are equal to 3 cm and other side is 4 cm. Its area is
(a) 20 cm^2 (b) $4\sqrt{5}$ cm^2 (c) $2\sqrt{5}$ cm^2 (d) 10 cm^2

3. The area of a triangular sign board of sides 5 cm , 12 cm and 13 cm is
(a) $\frac{65}{2}$ cm^2 (b) 30 cm^2 (c) 60 cm^2 (d) 12 cm^2

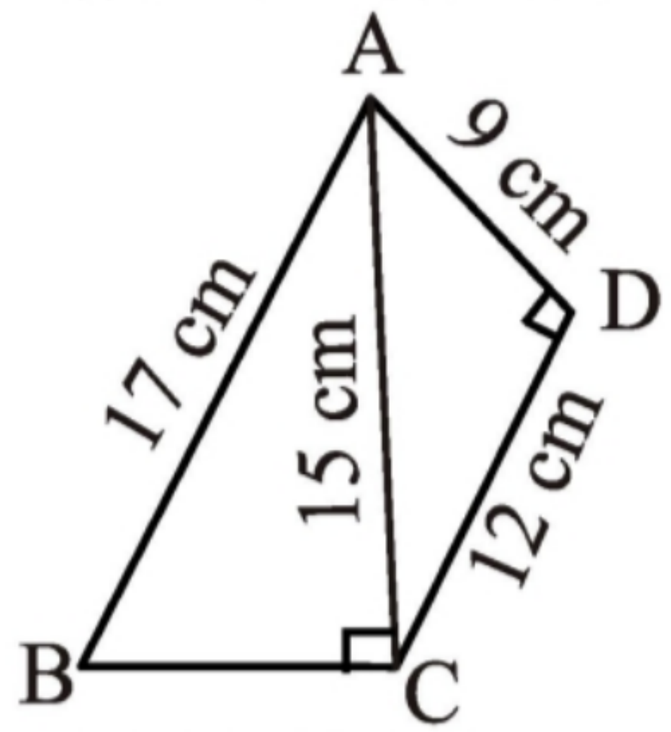
4. The side of a triangle are in the ratio of 25 : 14 : 12 and its perimeter is 510m. The greatest side of the triangle is
(a) 120 m (b) 170 m (c) 250 m (d) 270 m

5. The perimeter of a right triangle is 60 cm and its hypotenuse is 26 cm. The other two sides of the triangle are
(a) 24 cm. 10 cm (b) 25 cm. 9 cm (c) 20 cm. 14 cm (d) 26 cm. 8 cm

6. The area of quadrilateral ABCD in which AB = 3 cm, BC = 4 cm, CD = 4 cm, DA = 5 cm and AC = 5 cm is
(a) 15.2 cm^2 (b) 14.8 cm^2 (c) 15 cm^2 (d) 16.4 cm^2

7. The area of trapezium in which the parallel sides are 28 m and 40 m, non parallel sides are 9 m and 15 m is
(a) 286 m^2 (b) 316 m^2 (c) 306 m^2 (d) 296 m^2

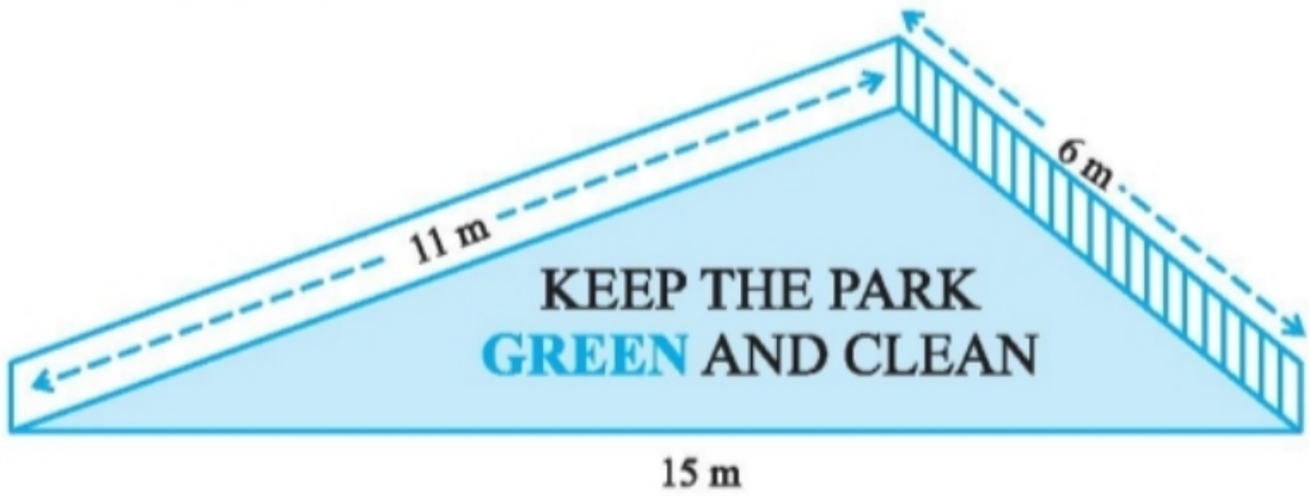
8. The area of quadrilateral ABCD in the below figure is
(a) 57 cm^2 (b) 95 cm^2 (c) 102 cm^2 (d) 114 cm^2



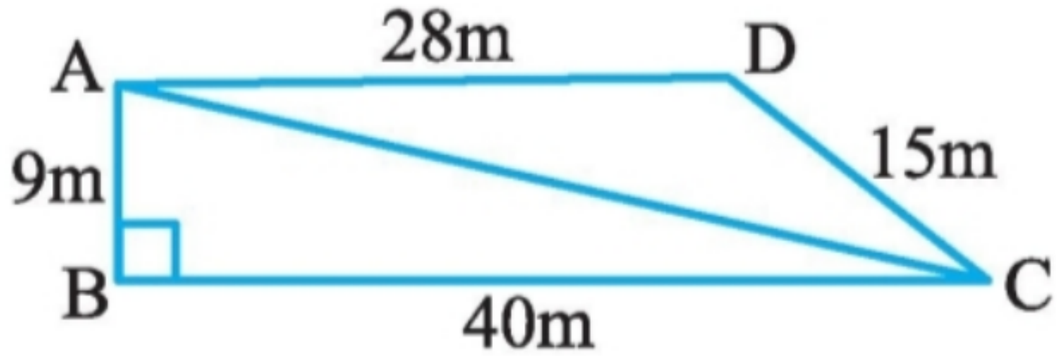
9. A traffic signal board indicating 'SCHOOL AHEAD' is an equilateral triangle with side a, then height of the traffic signal is:
(a) $\frac{\sqrt{3}}{2}a^2$ (b) $\frac{\sqrt{3}}{4}a^2$ (c) $\frac{\sqrt{3}}{2}a$ (d) none of these

12. 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.

13. 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.



14. 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. Then they cleaned the area enclosed within their lanes. If AB = 9 m, BC = 40 m, CD = 15 m, DA = 28 m and $\angle B = 90^\circ$, which group cleaned more area and by how much? Find the total area cleaned by the students (neglecting the width of the lanes).



15. 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. She divided the land in two equal parts. If the perimeter of the land is 400 m and one of the diagonals is 160 m, how much area each of them will get for their crops?

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

17. A triangle has sides 35 cm, 54 cm and 61 cm long. Find its area. Also find smallest of its altitudes.

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

19. 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.

20. 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?

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

22. The base of an isosceles triangle is 10 cm and one of its equal sides is 13 cm. Find its area.

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

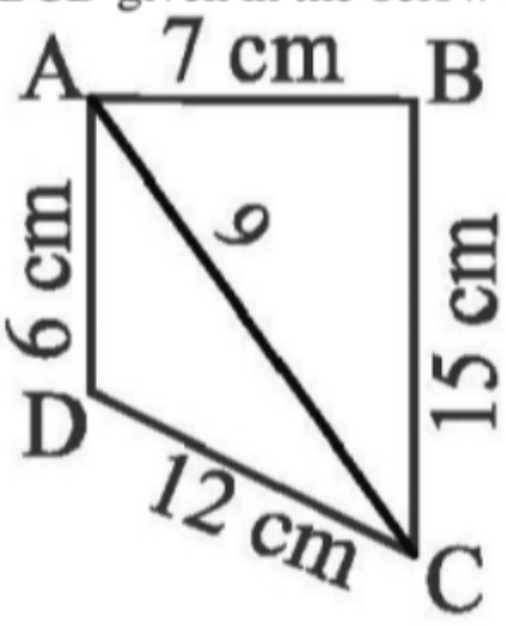
HERON'S FORMULA

1. Find the area of a triangle whose sides are 35 cm, 45 cm and 50 cm.

2. An isosceles triangle has perimeter 30 cm and each of its equal sides is 12 cm. Find its area. (use $\sqrt{15} = 3.88$)

3. The measure of one side of a right triangular field is 4.2 m. If the difference of the lengths of hypotenuse and the other is 14m, find the sides of the triangle and its area.

4. Find the area of the quadrilateral ABCD given in the below figure



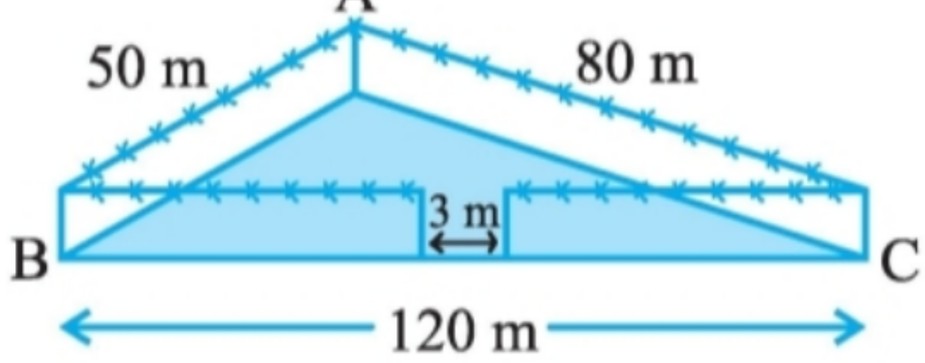
5. The perimeter of a rhombus is 40cm. If one of its diagonal is 16cm, find the area of the rhombus.

6. Two parallel sides of a trapezium are 60cm and 77cm and the other sides are 25cm and 26cm. Find the area of the trapezium.

7. Find the area of quadrilateral ABCD in which AD = 24cm, $\angle BAD = 900$ and B, C and D form an equilateral triangle of side 26cm. (use $\sqrt{3} = 1.73$)

8. The height of an equilateral triangle measures 9cm. Find its area, correct to two places of decimals (use $\sqrt{3} = 1.73$)

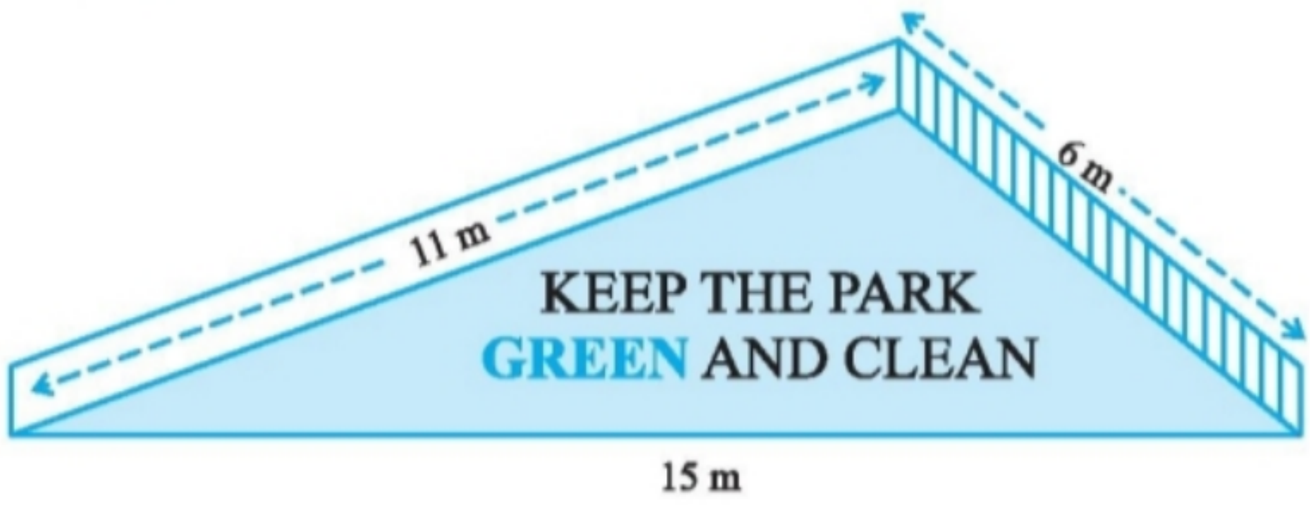
9. A triangular park ABC has sides 120m, 80m and. A gardener *Dhania* has to put a fence all around it and also plant grass inside. How much area does she need to plant? Find the cost of fencing it with barbed wire at the rate of Rs 20 per metre leaving a space 3m wide for a gate on one side.



10. 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?

11. 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?

10. 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, The area painted in colour is:



(a) $10\sqrt{2}\ m^2$ (b) $20\sqrt{2}\ m^2$ (c) $30\sqrt{2}\ m^2$ (d) none of these

11. An isosceles right triangle has area 8 cm2. The length of its hypotenuse is

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

12. The edges of a triangular board are 6 cm, 8 cm and 10 cm. The cost of painting it at the rate of 9 paise per cm2 is

(a) Rs 2.00 (b) Rs 2.16 (c) Rs 2.48 (d) Rs 3.00

13. The area of an isosceles triangle having base 2 cm and the length of one of the equal sides 4 cm, is

(a) $\sqrt{15}\ cm^2$ (b) $\sqrt{\frac{15}{2}}\ cm^2$ (c) $2\sqrt{15}\ cm^2$ (d) $4\sqrt{15}\ cm^2$

14. The sides of a triangle are 35 cm, 54 cm and 61 cm, respectively. The length of its longest altitude

(a) $16\sqrt{5}$ cm (b) $10\sqrt{5}$ cm (c) $24\sqrt{5}$ cm (d) 28 cm

15. If the area of an equilateral triangle is $16\sqrt{3}$ cm2, then the perimeter of the triangle is

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

HERON'S FORMULA

1. The sides of a triangle are 3 cm , 4 cm and 5 cm. Its area is
(a) 12 cm^2 (b) 15 cm^2 (c) 6 cm^2 (d) 9 cm^2

2. The area of isosceles triangle whose equal sides are equal to 3 cm and other side is 4 cm. Its area is
(a) 20 cm^2 (b) $4\sqrt{5}$ cm^2 (c) $2\sqrt{5}$ cm^2 (d) 10 cm^2

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(a) $\frac{65}{2}$ cm^2 (b) 30 cm^2 (c) 60 cm^2 (d) 12 cm^2

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(a) 120 m (b) 170 m (c) 250 m (d) 270 m

5. The perimeter of a right triangle is 60 cm and its hypotenuse is 26 cm. The other two sides of the triangle are
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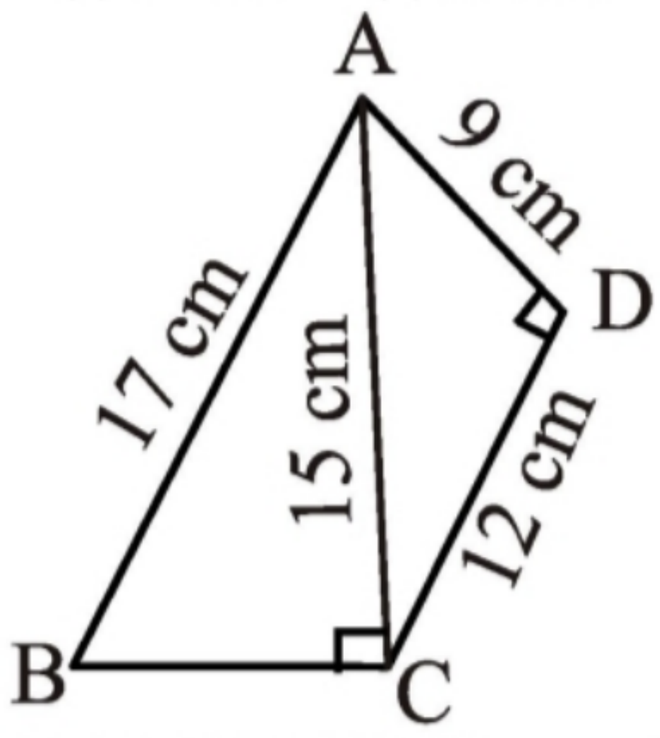

9. A traffic signal board indicating 'SCHOOL AHEAD' is an equilateral triangle with side a, then height of the traffic signal is:
(a) $\frac{\sqrt{3}}{2}a^2$ (b) $\frac{\sqrt{3}}{4}a^2$ (c) $\frac{\sqrt{3}}{2}a$ (d) none of these