

EduFest Academy Junior, Pune

9th Maths Heron's Formula

Very-Very Short Answer type Questions (1 mark)

- The altitude of an equilateral triangle is 9 cm then the area of triangle is
(a) $18\sqrt{3} \text{ cm}^2$ (b) $24\sqrt{3} \text{ cm}^2$ (c) $25\sqrt{3} \text{ cm}^2$ (d) $27\sqrt{3} \text{ cm}^2$
- An isosceles right triangle has area 8 cm^2 . The length of the hypotenuse is
(a) $\sqrt{24} \text{ cm}$ (b) $\sqrt{32} \text{ cm}$ (c) $\sqrt{48} \text{ cm}$ (d) $\sqrt{16} \text{ cm}$
- The area of an equilateral triangle is $36\sqrt{3} \text{ cm}^2$ then length of each side of triangle will be
(a) 144 cm (b) 60 cm (c) 36 cm (d) None of these
- The base of a triangular field is three times its height. If area of field is 13.5 hectares then its base is
(a) 900 m (b) 600 m (c) 1200 m (d) None of these
- The perimeter of an isosceles triangle is 32 cm. The ratio of equal sides to the base is 3:2. The sides of triangle will be
(a) 8 cm, 8 cm, 12 cm (b) 8 cm, 8 cm, 8 cm (c) 8 cm, 12 cm, 12 cm (d) 12 cm, 12 cm, 12 cm
- 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) 23 cm
- For an isosceles triangle having base b and each of equal side a, its perimeter will be _____
- Two sides of a triangle are 8 cm and 11 cm and perimeter of it is 32 cm. The length of third side will be _____
- The formula used to find the area of scalene triangle is called _____
- The sides of a triangle are in ratio 2:1:3 and its perimeter is 24 cm. The length of the longest side of triangle will be _____

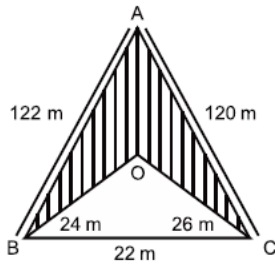
Very Short Answer type Question (2 Marks)

- If each side of a triangle is double then how many times the perimeter of triangle increased?
- If area of a triangle is 50 cm^2 and one of its sides is 10 cm then find the length of corresponding altitude.
- The sides of a triangle are 11 cm, 60 cm and 61 cm. Find the altitude to the smallest side.
- The ratio between the side of a triangle are 3:5:7 and its perimeter is 300 cm. Find the sides of triangle.
- Find the area of isosceles triangle whose non equal side is of 12 cm and its corresponding altitude is 7.5 cm.

Short Answer type Questions (3 Marks)

- Show that the area of an equilateral triangle is $\frac{\sqrt{3}}{4} x^2$, where side is x.
- The sides of a triangle are x, x + 1, 2x-1 and its area is $x\sqrt{10}$ sq. units. Find the value of x.
- The perimeter of a triangle is 50 cm. One side of a triangle is 4 cm longer than the smaller side and the third side is 6 cm less than twice the smaller side. Find the area of the triangle.
- Find the area of shaded region in the figure.

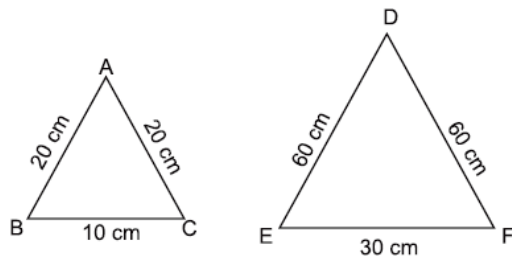
How many triangle flower beds of 6 m^2 can be made from this area? [use $\sqrt{105}=10.25$]



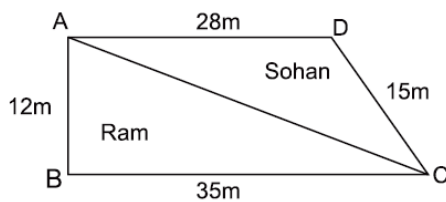
20. The side of a triangular sheet are 5 cm, 12 cm and 13 cm. Find the cost of painting on the sheet at the rate of 30 per cm^2 .

Long Answer Questions (5 Marks)

21. Find the ratio between the area of triangle $\triangle ABC$ and $\triangle DEF$.



22. If perimeter of a triangle is x cm and its sides are p , q and r cm. What will be the area of triangle? Use the Heron's formula.
23. If every side of a equilateral triangle is doubled, then find the percentage increase in the area of the triangle.
24. While selling clothes for making flags, a shopkeeper claims to sell each piece of cloth in the shape of an equilateral triangle of each side 12 cm while actually he was selling the same in the shape of an isosceles triangle with side 12 cm, 10 cm and 10 cm. How much cloth was he saving in selling each flag?
25. A piece of land is in the shape as given in the figure, has been cut along diagonal AC. The two pieces of land has been distributed between Ram and Sohan. Who will get larger piece of land in terms of area? [Use $\sqrt{10} = 3.15$]



26. A triangle hoarding of dimensions 11 m, 6 m and 15 m is used for commercial activities. The hoarding yield an earning of ₹5000 per m^2 per month. Calculate the total earning by the hoarding in a month. [Use $\sqrt{2} = 1.41$]

Answers

1. (d) $27\sqrt{3} \text{ cm}^2$
2. (b) $\sqrt{32} \text{ cm}$
3. (d) None of these
4. (a) 900 m
5. (c) 8 cm, 12 cm, 12cm
6. (c) 16 cm
7. $2a + b$ units
8. 13 cm
9. Heron's formula
10. 12 cm
11. 4 times
12. 10 cm
13. 60 cm
14. 60 cm, 100 cm, 140 cm
15. 45 cm^2
16. No ans
17. $X = 6$
18. 109.6 m^2
19. 1047 m^2 , 179
20. ₹900
21. 1: 9

22. $\sqrt{\frac{x}{2} \left(\frac{x}{2} - p \right) \left(\frac{x}{2} - q \right) \left(\frac{x}{2} - r \right)}$
23. Percentage Increase = $\frac{\text{Increased Area}}{\text{Initial Area}} \times 100$
24. Difference = 14.352 cm^2
25. Ram, 210 m^2
26. ₹141000

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