

INDIAN SCHOOL AL WADI AL KABIR

Class IX, Mathematics

Worksheet-Heron's Formula

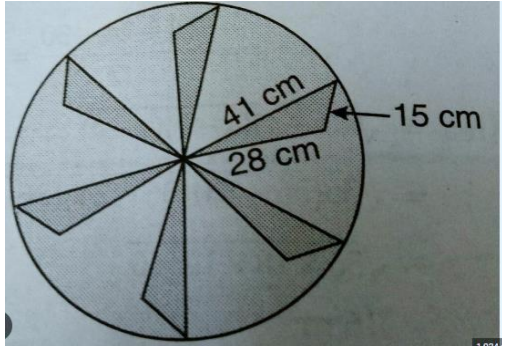
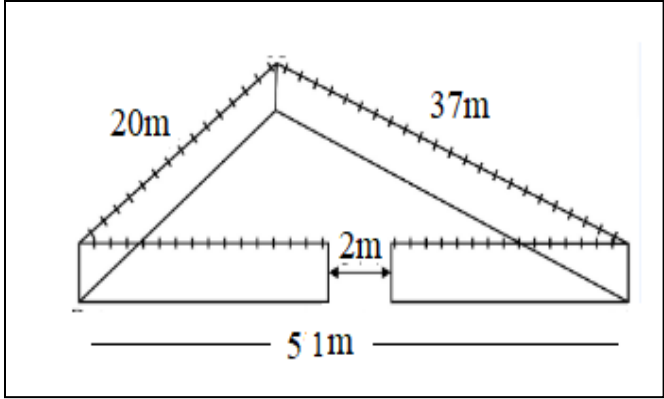
16-04-2023

Q. No.	Questions of 1 Mark each.							
1.	Area of an equilateral triangle, of each side $2a$ units is:							
	(A)	$\frac{\sqrt{3}a^2}{4}$	(B)	$\sqrt{3} a^2$	(C)	$\frac{\sqrt{3}a^2}{8}$	(D)	$\frac{\sqrt{3}a^2}{2}$
2.	The sides of a triangle are 56cm, 60cm and 52cm long. Then the semi-perimeter of this triangle is:							
	(A)	82cm	(B)	48cm	(C)	168cm	(D)	84cm
3.	The semi-perimeter of an equilateral triangle is 27 cm, then the area of the triangle will be:							
	(A)	$81\sqrt{3} \text{ cm}^2$	(B)	$9\sqrt{3} \text{ cm}^2$	(C)	$6\sqrt{3} \text{ cm}^2$	(D)	$9\sqrt{2} \text{ cm}^2$
4.	An isosceles right triangle has area 8 cm^2 . The length of its hypotenuse will be:							
	(A)	8 cm	(B)	4 cm	(C)	$4\sqrt{2} \text{ cm}$	(D)	$4\sqrt{3} \text{ cm}$
5.	If the area of an equilateral triangle is $100\sqrt{3} \text{ cm}^2$, then the perimeter of the triangle is:							
	(A)	$4\sqrt{2} \text{ cm}$	(B)	40cm	(C)	400cm	(D)	60 cm
6.	The sides of a triangle are 13cm, 14cm and 15cm. What will be its semi-perimeter?							
7.	An isosceles triangle has perimeter 30cm and each of the equal sides is 12cm. Find the area of the triangle.							
8.	Find the area of an equilateral triangle if its perimeter is 84 m.							
9.	Two sides of a triangle are 18 cm and 20 cm and its semi-perimeter is 27 cm, then what will be the third side of the triangle?							
10.	The base and hypotenuse of a right triangle are respectively 24 cm and 25 cm long. Find its area.							
Questions of 2 marks each								
11.	The perimeter of a triangle is 540m and its sides are in the ratio 25:17:12. Find its area.							
12.	If the sides of a triangle are 26cm, 28cm and 30cm. Find the area of the triangle.							
13.	An umbrella is made by stitching ten triangular pieces of cloth, each of measuring 60cm, 60 cm and 20cm. Find the area of the cloth required for the umbrella.							
14.	Find the area of a triangle whose two sides are 56 cm and 60 cm and its perimeter is 168cm.							
15.	The sides of a triangular field are 51m, 37m and 20m. Find the number of rose beds that can be prepared in the field if each rose bed occupies a space of 6sq.m.							

Questions of 3 marks each

16.	Find the area of a triangular field of sides 16m, 12m and 20m. Find the cost of paving interlock bricks in the field at the rate of ₹40 per m ² .
17.	Find the area of a triangular field of sides 18m, 24m and 30m. Also, find the altitude corresponding to the shortest side.
18.	Find the area of an isosceles triangle whose one side is 10cm greater than its equal side and its perimeter is 100cm (Take $\sqrt{5} = 2.23$)

Questions of 4 marks each

19.	<p>Two identical circles with same inside design as shown in the figure are to be made at the entrance. The identical triangular leaves are to be painted red and the remaining are to be painted green. Find the total area to be painted red.</p>	
20.	<p>Case Study Based:</p> <p>A triangular park has sides 51m, 37m and 20m. Gardener has to put a fence all around its boundary and also plant grass inside.</p> <p>(1) Find the area in which grass will be planted.</p> <p>(2) Find the cost of fencing it with barbed wire at the rate of ₹110 per meter, leaving a space 2m wide for a gate on one side.</p>	

	Answers							
Answers	1	B	2	D	3	A	4	C
	5	D	6	21cm	7	$9\sqrt{15} \text{ cm}^2$	8	$196\sqrt{3} \text{ m}^2$
	9	16cm	10	84 cm^2	11	9000m^2	12	336 cm^2
	13	$1000\sqrt{35} \text{ cm}^2$	14	1344 cm^2	15	51	16	Area= 96 m^2 Cost= $\text{₹ } 3840$
	17	Area = 216 m^2 , Altitude = 24 m	18	446 cm^2	19	126 cm^2 , 756cm^2	20	(1) 306m^2 (2) $\text{₹ } 11660$