



INDIAN SCHOOL AL WADI AL KABIR

Class IX, Mathematics

Worksheet – HERON’S FORMULA (2025-26)

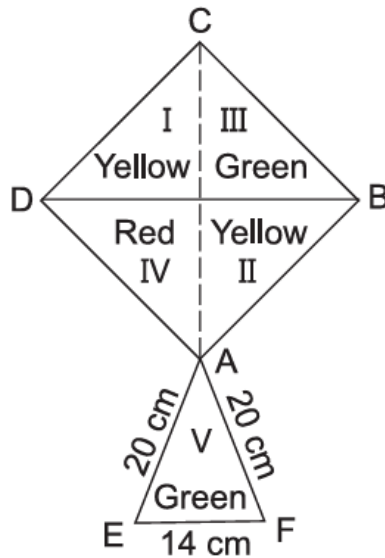
Questions of 1 mark each

Q.1.	The area of an equilateral triangle is $36\sqrt{3} \text{ cm}^2$. The perimeter of the triangle (in cm) is:							
	A	36 cm	B	38 cm	C	40 cm	D	34 cm
Q.2.	An isosceles right triangle has area 18 cm^2 . The length of its hypotenuse will be:							
	A	$6\sqrt{6} \text{ cm}$	B	$6\sqrt{3} \text{ cm}$	C	$6\sqrt{2} \text{ cm}$	D	$36\sqrt{2} \text{ cm}$
Q.3.	The sides of a triangle are 45cm, 60 cm and 75 cm long, then the semi-perimeter of this triangle is:							
	A	92 cm	B	90 cm	C	80 cm	D	180 cm
Q.4.	The semi-perimeter of an equilateral triangle is 15 cm, then the area of the triangle will be:							
	A	25 cm^2	B	$100\sqrt{3} \text{ cm}^2$	C	$5\sqrt{3} \text{ cm}^2$	D	$25\sqrt{3} \text{ cm}^2$
Q.5.	The length of the sides of a triangle are 13 cm, 14 cm and 15 cm. The length of altitude of the triangle corresponding to the side 14 cm is:							
	A	13 cm	B	14.2 cm	C	12 cm	D	15.5 cm
Q.6.	The side of a triangle are in the ratio 6:8:10 and its perimeter is 360 m. The greatest side of the triangle is:							
	A	150 m	B	120 m	C	90 m	D	140 m
Q.7.	The length of each side of an equilateral triangle is 12 cm, then the area of the triangle is:							
	A	$12\sqrt{3} \text{ cm}^2$	B	$144\sqrt{3} \text{ cm}^2$	C	$36\sqrt{5} \text{ cm}^2$	D	$36\sqrt{3} \text{ cm}^2$

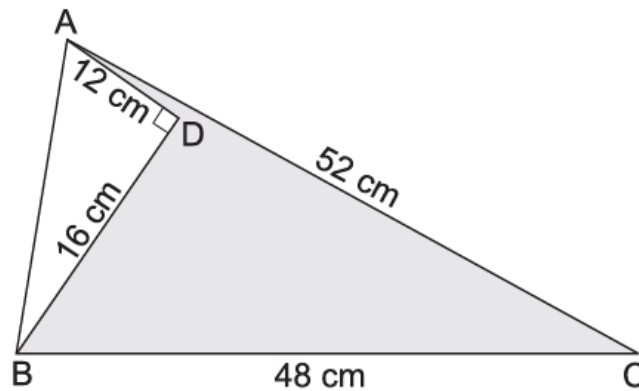
Q.8.	If the area of a right triangle with base 60 cm is 900 cm^2 , then its height is ____.							
	A	60 cm	B	30 cm	C	48 cm	D	40 cm
Q.9.	The area of an isosceles triangle having base 10 cm and the length of one of the equal sides 13 cm is:							
	A	60 cm^2	B	$60\sqrt{3}\text{ cm}^2$	C	$30\sqrt{3}\text{ cm}^2$	D	70 cm^2
<u>ASSERTION AND REASONING</u> DIRECTION: A statement of Assertion (A) is followed by a statement of Reason (R). Choose the correct option. (a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A). (b) Both Assertion (A) and Reason (R) are true and Reason (R) is not the correct explanation of Assertion (A). (c) Assertion (A) is true but Reason (R) is false. (d) Assertion (A) is false but Reason (R) is true.								
Q.10.	Assertion: The side of an isosceles right triangle of hypotenuse $6\sqrt{2}$ cm is 6 cm. Reason: If the perimeter of an equilateral triangle is 240 cm. Then its area will be $800\sqrt{3}\text{ cm}^2$.							
Questions of 2 marks each								
Q.11.	If the sides of a triangle are 24 cm, 30 cm and 36 cm. Find the area of the triangle.							
Q.12.	Find the area of a triangle whose two sides are 48 cm and 55 cm and its perimeter is 150 cm.							
Questions of 3 marks each								
Q.13.	The length of the sides of a triangle are 5 cm, 12 cm and 13 cm. Find the length of perpendicular from the opposite vertex to the side whose length is 13 cm.							
Q.14.	A triangular park has sides of lengths 18 m, 24 m and 30 m. Find the cost of planting grass in the park at the rate of ₹45 per square meter.							
Q.15.	The perimeter of a triangular field is 480 m and its sides are in the ratio 5: 12: 13. Find the area of the triangular field.							

Questions of 5 marks each

- Q.16.** In the given figure, ABCD is a square with diagonal 44 cm. How much paper of each shade is needed to make a kite given in the figure? (Take $\sqrt{39} = 6.24$)



- Q.17.** Find the area of the shaded region in the figure given below.



Case study-based (4 marks)

Keerthi who is a student of class IX has a query regarding a plot; how it is measured, manufactured and built. Her teacher then explained her about it by giving an example of Unique Builder Group, Jaipur. Teacher said that this group launched a scheme of triangular shaped plots in Jaisinghpura near Ajmer –Jaipur six lane highway. Its shape is triangle and this land is approved by Jaipur Development Authority. It means that this land is loanable, because each person does not have sufficient amount to pay. The sides of these triangular plots are in the ratio 3:4:5 and its perimeter is 144 m.

Q.18.	What is the semi-perimeter?
Q.19.	What are the actual lengths of the three sides of the triangular plot?
Q.20.	Determine the area of triangular plot using the parameters.
Q.21.	If the cost of fencing the plot is ₹100 per meter, what will be the total cost of fencing one plot?

ANSWERS							
Q.1	A	Q.2	C	Q.3	B	Q.4	D
Q.5	C	Q.6	A	Q.7	D	Q.8	B
Q.9	A	Q.10	D	Q.11	$135\sqrt{7}cm^2$	Q.12	$180\sqrt{35}cm^2$
Q.13	$\frac{60}{13}cm$ or 4.615 cm	Q.14	₹9720	Q.15	$7680 m^2$	Q.16	Yellow: $484 cm^2$, Red : $242 cm^2$ Green: $373.04 cm^2$
Q.17	$384 cm^2$	Q.18	72 m	Q.19	36 m, 48 m, 60 m	Q.20	$864 m^2$
Q.21	₹14400						