



INDIAN SCHOOL MUSCAT
SENIOR SECTION

DEPARTMENT OF MATHEMATICS
CLASS IX
WORKSHEET 6
HERON'S FORMULA



SECTION A: (1 MARK)

1. The area of an equilateral triangle $16\sqrt{3} \text{ cm}^2$. Find its perimeter. (CBSE 2012) 24 cm
2. Find the area of an isosceles triangle having base 2cm and the length of one of the equal sides 4cm. (NCERT Exemplar) $\sqrt{15} \text{ cm}^2$
3. If the base of a triangle is doubled and the corresponding altitude is tripled. Find the ratio of the new area to the previous area. (CBSE 2013) 6:1

SECTION B: (2 MARKS)

4. The base of a right triangle ABC is 16 cm and hypotenuse is 34 cm. Find the area of the triangle. (CBSE 2015) 240 cm^2
5. Using Heron's formula, find the area of an equilateral triangle with side 4a units. (NCERT Exemplar) $4a^2\sqrt{3}$
6. The edges of a triangular board are 6cm, 8cm and 10cm. Find the cost of painting it at the rate of Rs 90 per cm^2 (NCERT Exemplar) Rs. 2160
7. The semi-perimeter of a triangle is 132 cm. The product of the difference of semi-perimeter and its respective sides is 13200 cm. Find the area of the triangle. (NCERT Exemplar) 1320 cm^2

SECTION C: (3 MARKS)

8. Find the area of a rhombus whose one side is 20 m and one diagonal is 24 m. (CBSE 2012) 384 m^2
9. If each side of any triangle is doubled then find the percentage increase in its area. (NCERT Exemplar) 300%
10. If each side of an equilateral triangle is tripled then find the percentage increase in its area. (NCERT Exemplar) 800%
11. A field is in the shape of a trapezium having parallel sides 90m and 30m. These sides meet the third side at right angles. The length of the fourth side is 100 m. If it cost Rs 4 to plough 1 m^2 of the field, find the total cost of ploughing the field. (CBSE 2013) Rs 19200

SECTION D: (4 MARKS)

12. Calculate the area of the shaded region in the fig 1, given below 54cm^2
13. In a rectangular field of dimensions $125\text{ m} \times 80\text{ m}$, a triangular park is constructed. If the dimensions of the park are 50 m , 78 m and 112 m . Find the area of the remaining field. 8320m^2
14. The lengths of two adjacent sides of a parallelogram are 17 cm and 12 cm . One of its diagonal is 25 cm long. Find the area of the parallelogram. Also find the length of the altitude from vertex on the side of length 12 cm . $A = 90\text{cm}^2$
 $h = 15\text{cm}$
(CBSE 2012)
15. In the fig 2, $\triangle ABC$ has sides $AB = 41\text{ cm}$, $AC = 15\text{ cm}$ and $BC = 28\text{ cm}$. On BC a parallelogram $DBCE$ of the same area as that of $\triangle ABC$ is constructed. Find the height of the parallelogram. $h = 4.5\text{cm}$
(CBSE 2014)

