EXERCISE # 1

A. Short Answer Type Questions

Q.1 Find the area of a triangle, two sides of which are 8 cm and 11 cm and the perimeter is 32 cm. **[NCERT]**

Q.2 The sides of a triangular plot are in the ratio of 3 : 5 : 7 and its perimeter is 300 m. Find its area. **[NCERT]**

Q.3 An isosceles triangle has perimeter 30 cm and each of the equal sides is 12 cm. Find the area of the triangle. **[NCERT]**

Q.4 Find the perimeter of equilateral triangle whose area is $36\sqrt{3}$ cm^2.

Q.5 The base of a right triangle is 48 cm and its hypotenuse is 50 cm long. Find the area of the triangle.

Q.6 If the height of an equilateral triangle is 6 cm. Then find its area.

Q.7 The area of an equilateral triangle is $81\sqrt{3}$ cm^2. Find its height.

Q.8 Find the area of ΔABC in which BC = 8 cm, AC = 15 cm and AB = 17 cm. Find the length of altitude drawn on AB.

Q.9 If the difference between the semi-perimeter and the sides of a ΔABC are 8 cm, 7 cm and 5 cm respectively. Then find the area of the triangle.

B. Long Answer Type Questions

Q.10 Two parallel side of a trapezium are 60 cm and 77 cm and other sides are 25 cm and 26 cm. Find the area of the trapezium.

Q.11 The sides of a quadrilateral, taken in order are 5, 12, 14 and 15 metres respectively and the angle contained by the first two sides is a right angle. Find its area.

Q.12 Find the area of a cyclic quadrilateral whose sides are 40 cm, 75 cm, 77 cm and 36 cm respectively.

Q.13 Find the ratio of the area of a square to that of the square drawn on its diagonal.

Q.14 The adjacent sides of a parallelogram are 24 cm and 32 cm. If the distance between the longer sides is 17.4 cm, determine the distance between the shorter sides.

Q.15 The lengths of the sides of triangle ABC are in the ratio 4 : 3 : 5, and its perimeter is 144 cm. Find the height corresponding to the longest side.

Q.16 Two parallel sides of a trapezium are 60 cm and 77 cm and other sides are 25 cm and 26 cm. Find the area of the trapezium.

Q.17 A field is in the shape of a trapezium whose parallel sides are 50 m and 15 m. The non-parallel sides are 20 m and 25 m. Prove that the area of the trapezium is $\frac{1300\sqrt{6}}{7}$ m^2.

ANSWER KEY

1. $8\sqrt{30}\,\text{cm}^2$ **2.** $1500\sqrt{3}\,\text{m}^2$ **3.** $34.83\,\text{cm}^2$ **4.** $36\,\text{cm}$ **5.** $336\,\text{cm}^2$

6. $12\sqrt{3}\,\text{cm}^2$ **7.** $9\sqrt{3}\,\text{cm}$ **8.** $7.04\,\text{cm}$ **9.** $20\sqrt{14}\,\text{cm}^2$ **10.** $1644\,\text{cm}^2$

11. $114\,\text{m}^2$ **12.** $2886\,\text{cm}^2$ **13.** $1:2$ **14.** $23.2\,\text{cm}$ **15.** $28.8\,\text{cm}$

16. $1644\,\text{cm}^2$ **17.** $\left\{\begin{matrix}\text{Area of } \Delta ABC = 22627.41\,\text{m}^2 \\ \text{Area of } \Delta ACD = 38400\,\text{m}^2\end{matrix}\right\}$

EXERCISE # 2

A. Very short Answer Type Questions

Q.1 Find the area of a triangle whose sides are respectively 150 cm, 120 cm and 200 cm.

Q.2 In a ΔABC it is given that base = 12 cm and height = 5 cm. Find its area.

Q.3 Find the area of a triangle whose sides are 9 cm, 12 cm and 15 cm.

Q.4 The lengths of three sides of a triangle are 20 cm, 16 cm and 12 cm. Then find the area of the triangle.

Q.5 The base of an isosceles triangle is 6 cm and each of its equal sides is 5 cm. Then find the height of the triangle.

Q.6 Each of the two equal sides of an isosceles right triangle is 10 cm long. Then find its area.

B. Short Answer Type Questions

Q.7 The perimeters of a right triangle is 450 m. If its sides are in the ratio 13 : 12 : 5. Find the area of the triangle.

Q.8 Using Heron's formula find the area of an isosceles triangle whose one of the equal sides is 16 cm and third side is 10 cm.

Q.9 The perimeter of a right triangle is 144 cm and its hypotenuse measures 65 cm. Find the lengths of other sides and calculate its area. Verify the result using Hero's formula.

Q.10 The perimeter of a right triangles is 12 cm and its hypotenuse is of length 5 cm. Fine the other two sides and calculate its area.

C. Long Answer Type Questions

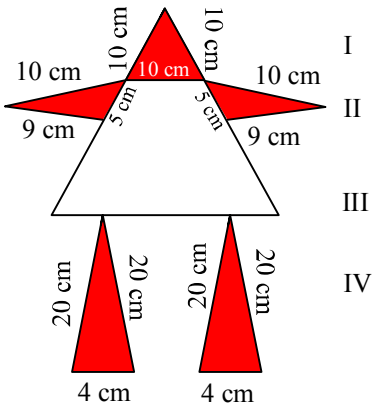
Q.11 The sides of a quadrangular field, taken is order are 26m, 27m, 7m, and 24m respectively. The angle contained by the last two sides is a right angle. Find its Area.

Q.12 An isosceles right triangle has an area 200 cm^2. What is the length of its hypotenuse?

Q.13 The sides of a triangle are of lengths 10 cm, 15 cm and 15 cm. Find the length of the altitude drawn on the side with length 15 cm.

Q.14 Suman made a picture with some white paper and a single coloured paper as shown in figure. White paper is available at her home and free of cost. The cost of coloured paper used is at the rate of 10 p per cm^2. Find the total cost of the coloured paper used.

(Take $\sqrt{3}$ = 1.732 and $\sqrt{11}$ = 3.31)



Q.15 If each of the equal sides of an isosceles triangle measures 2 cm more than its height and the base of the triangle measures 12 cm, then find the area of the triangle.

ANSWER KEY

1. 8966.56 cm^2 **2.** 30 cm^2 **3.** 54 cm^2 **4.** 96 cm^2 **5.** 4 cm

6. 50 cm^2 **7.** 6750 m^2 **8.** $5\sqrt{231}$ cm^2 **9.** 16 cm, 63 cm, 504 cm^2 **10.** 3 cm, 4 cm; 6 cm^2

11. 375.8 m^2 **12.** $20\sqrt{2}$ cm **13.** 9.42 cm **14.** 8 cm or 6 cm **15.** 48 cm^2