

12. Heron's Formula

Q 1 Write Heron's formula to find the area of a triangle.

Mark (1)

Q 2 Write the area of the rhombus, if d_1 and d_2 are the lengths of its diagonals.

Mark (1)

Q 3 What is the area of equilateral triangle whose side is a units?

Mark (1)

Q 4 What is the area of an isosceles right angled triangle whose equal side is a units?

Mark (1)

Q 5 What is the side of a rhombus whose diagonal is d_1 and d_2 ?

Mark (1)

Q 6 Find the area of a triangle whose sides are 13cm, 14cm and 15cm.

Marks (2)

Q 7 The perimeter of a triangular field is 450 m and its sides are in the ratio 13:12:15. Find the area of the triangle.

Marks (2)

Q 8 Find the area of a triangle whose two sides are 8 cm and 11cm and the perimeter is 32cm.

Marks (2)

Q 9 The lengths of the sides of a triangle are 5 cm, 12 cm and 13 cm. Find the length of the perpendicular from the opposite vertex to the side whose length is 13 cm.

Marks (2)

Q 10 If the sides of the triangle are 26 cm, 28 cm and 30 cm, find the area of the triangle.

Marks (2)

Q 11 The perimeter of a right triangle is 450 m. If its sides are in the ratio 13 : 12 : 5. Find the area of the triangle.

Marks (2)

Q 12 There is a slide in a park. One of its side walls has been painted in some colours with a message "KEEP THE PARK GREEN AND CLEAN". If the sides of the wall are 15m, 11m and 6m, find the area painted in colour.

Marks (2)

Q 13 If the side of an equilateral triangle is ' a ', then find the altitude of the equilateral triangle.

Marks (2)

Q 14 Find the area of a triangle whose two sides are 8 cm and 11cm and the perimeter is 32cm.

Marks (2)

Q 15 A rhombus shaped field has green grass for 18 horses to graze. If each side of the rhombus is 30m and its longer diagonal is 48m, how much area of grass field will each Horse be grazing?

Marks (2)

Q 16 Find the area of a quadrilateral ABCD whose sides are 9m, 40m, 28m and 15m respectively and the angle between the first two sides is a right angle.

Marks (2)

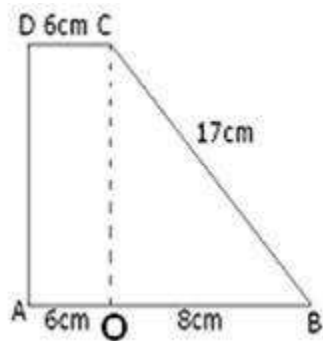
Q 17 Find the area of a rhombus whose perimeter is 80m and one of diagonal is 24m.

Marks (2)

Q 18 A floral design on a floor is made up of 16 tiles that are triangular, the sides of the triangle being 9cm, 28cm and 35cm. Find the area of the floral design.

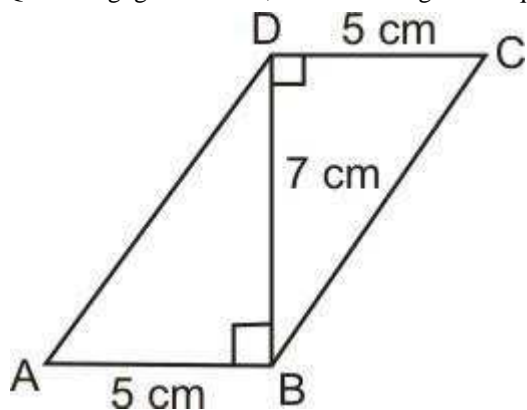
Marks (2)

Q 19 Compute the area of trapezium.



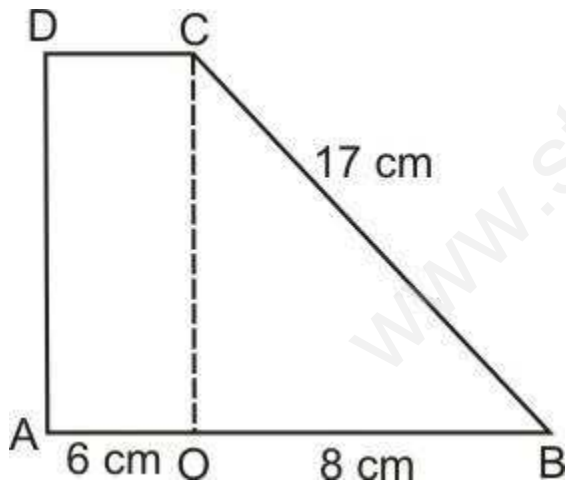
Marks (2)

Q 20 In fig. given below, BD is the diagonal of quadrilateral ABCD. Find the area of ABCD.



Marks (3)

Q 21 Compute the area of the following trapezium:



Marks (3)

Q 22 Find area and perimeter of triangle whose sides are 8cm, 19cm and 15 cm.

Marks (3)

Q 23 Find the area of triangle whose sides are 5cm, 12cm, 13 cm. Also find the Shortest altitude.

Marks (3)

Q 24 In a rectangular field of dimension 50 ft x 30 ft, a triangular park is constructed. If the dimension of the triangular park is 14 ft, 15 ft and 13 ft, find the area of the remaining field.

Marks (3)

Q 25 Sanya owns a piece of land which is in the shape of a rhombus. She wants her daughter and son to work on the land and produce different crops to suffice the needs of their family. She divided the land in two equal parts. If the perimeter of the land is 400 m and one of the diagonals is 160 m, how much area each of them will get?

Marks (3)

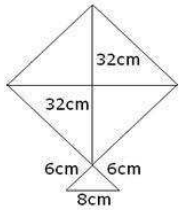
Q 26 An umbrella is made by stitching 10 triangular pieces of cloth of two different colours, each piece measuring 20 cm, 50 cm and 50 cm. How much cloth of each colour is required for the umbrella?

Marks (3)

Q 27 Find the area of triangle whose sides are 5cm, 12cm, 13 cm. Also find the shortest altitude.

Marks (3)

Q 28 A kite is in the shape of a square with diagonal 32 cm and an isosceles triangle of base 8cm and equal sides are 6cm. How much paper is required to build the kite?

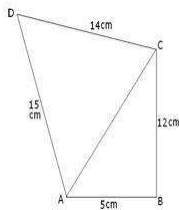


Marks (3)

Q 29 Find the area of the trapezium whose parallel sides are 25 cm, 13 cm and other sides are 15 cm and 15 cm.

Marks (3)

Q 30 The side of a quadrilateral taken in order are 5, 12, 14 and 15 metres respectively and the angle formed by the first two sides is a right angle find its area.



Marks (3)

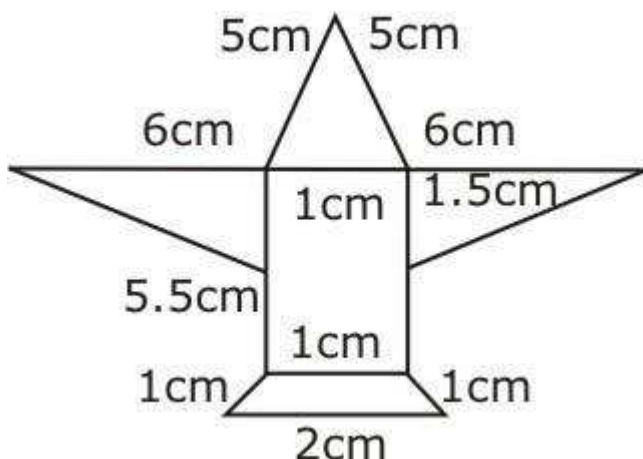
Q 31 Find the area and perimeter of triangle whose sides are 8cm, 19cm and 15 cm.

Marks (3)

Q 32 Find the area of a quadrilateral ABCD which $AD = 24$ cm, $\angle BAD = 90^\circ$ and $\triangle BCD$ is an equilateral triangle whose each side is 26cm.

Marks (4)

Q 33 Mayank made a picture of an aeroplane with paper as shown in figure calculate total area of paper used.



Marks (4)

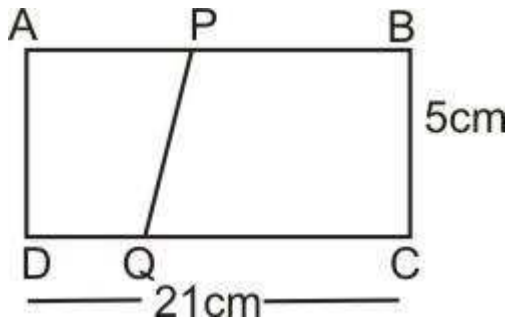
Q 34 A kite in the shape of a square with diagonal 32 cm and an isosceles triangle of base 8 cm and equal sides are 6cm how much paper is required to build the kite.

Marks (4)

Q 35 The perimeter of a right triangle is 60 cm and its hypotenuse is 26 cm. Find area of triangle and its other two sides.

Marks (4)

Q 36 A trapezium PBCQ with its parallel sides QC and PB in the ratio 7:5 is cut from a rectangle ABCD, if area of trapezium is $\frac{4}{7}$ part of the area of rectangle, find the length of QC and PB.



Marks (4)

Q 37 A trapezium whose parallel sides are 25 cm and 10 cm. The non-parallel sides are 14 cm and 13 cm. find the area of the trapezium .

Marks (4)

Q 38 The sides of a quadrilateral ABCD, taken in order are 5 cm, 12 cm, 14 cm and 15 cm respectively, and angle contained between first two sides is a right angle. Find its area.

Marks (4)

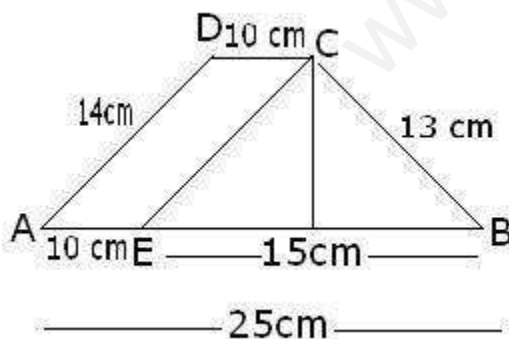
Q 39 A rhombus sheet, whose perimeter is 32 cm and whose one diagonal is 10 cm long, is painted on both sides at the rate of 5 per sq. cm. Find the cost of painting.

Marks (4)

Q 40 The perimeter of a right triangle is 60 cm and its hypotenuse is 26 cm. Find other two sides and area of triangle?

Marks (4)

Q 41 A field is in the shape of trapezium whose parallel sides are 25m and 10m. The non-parallel sides are 14m and 13m. Find the area of the field.



Marks (4)

- Q 1 What is the area of an equilateral triangle of side 2a.
- Q 2 What will be the area of a right angled triangle whose base is 12 cm and hypotenuse is 13 cm.
- Q 3 Find the area of a triangle whose sides are respectively 150 cm, 120 cm and 200 cm.
- Q 4 The perimeter of a triangular field is 540 m and its sides are in the ratio 25:17:12. Find the area of the triangle.
- Q 5 A triangle and a parallelogram are on the same base and have the same area. If the sides of the triangle are 26 cm, 28 cm and 30 cm, and the parallelogram stands on the base 28 cm, find the height of the parallelogram.
- Q 6 The perimeter of a triangular park is 240 m. If two of its sides are 78 m and 50 m, find the length of the perpendicular on the side of length 50 m from the opposite vertex.
- Q 7 Find the percentage increase in the area of a triangle if its each side is doubled.
- Q 8 A skirt is made by stitching 10 triangular pieces of cloth of two different colors, each piece measuring 20 cm, 50 cm and 50 cm. How much cloth of each color is required for the skirt.
- Q 9 Find the area of the quadrilateral ABCD in which $AD = 24$ cm, $\angle BAD = 90^\circ$ and BCD forms an equilateral triangle whose each side is equal to 26 cm.
- Q 10 Find the area of a rhombus whose perimeter is 80 cm and one of its diagonal is 24 cm.
- Q 11 Two parallel sides of a trapezium are 60 cm and 77 cm and the others sides are 25 cm and 26 cm. Find the area of the trapezium.
- Q 12 Radha has a piece of land which is in the shape of a rhombus. She wants her son and daughter to cultivate equal areas of land, thus she divides the area of the rhombus equally amongst the two. If the perimeter of land is 400 m and of the diagonals is 160 m, How much area will each one get?
- Q 13 A floral design on the wall is made up of 16 tiles which are triangular, the sides are of the triangle are 9 cm, 28 cm and 35 cm. Find the cost of polishing the tiles at the rate of 50 paise per cm^2 .