8. Quadrilaterals

Q 1 Name a quadrilateral whose each pair of opposite sides is equal.

Mark (1)

Q 2 What is the sum of two consecutive angles in a parallelogram?

Mark (1)

Q 3 The angles of quadrilateral are respectively 100°, 30°, 92° and x. Find the value of x.

Marks (2)

Q 4 The angles of quadrilateral are in the ratio 3:5:9:13. Find all the angles of the quadrilateral.

Marks (2)

Q 5 Thee sides AB and CD of a parallelogram ABCD are

bisected at E and F. Prove that EBFD is a parallelogram.

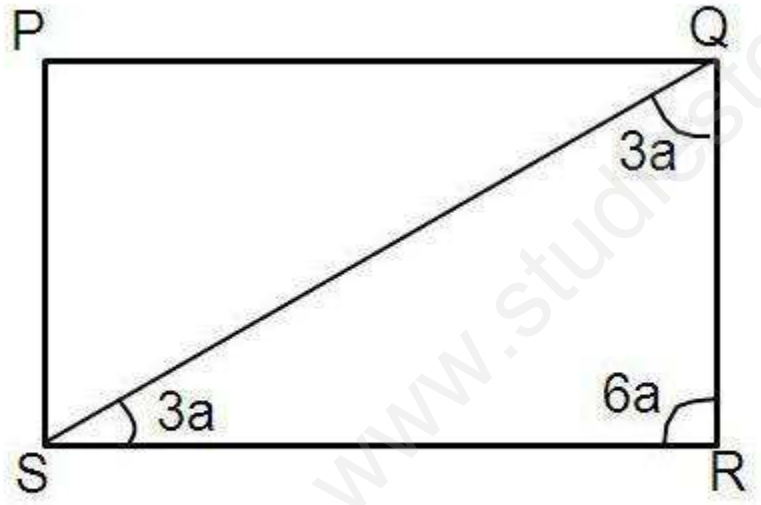
Marks (2)

Q 6 In a triangle ABC, P,Q and R are the mid – points of sides BC, CA and AB respectively.

If AC = 21 cm, BC = 29 cm and AB = 30 cm, find the perimeter of the quadrilateral ARPQ.

Marks (2)

Q 7 Find the four angles P, Q, R and S in the parallelogram PQRS as shown below.



Marks (2)

Q 8 Two opposite angles of a parallelogram are $(5x + 1)^\circ$ and $(49 – 3x)^\circ$.

Find the measure of these opposite angles of the parallelogram.

Marks (2)

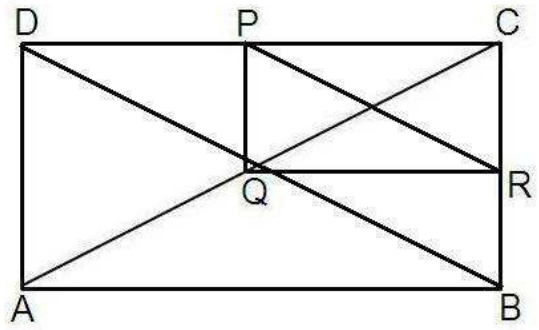
Q 9 Prove that each of the four sides of a rhombus is of the same length.

Marks (2)

Q 10 ABCD is a rhombus. Show that diagonals AC bisects angle A as well as angle C.

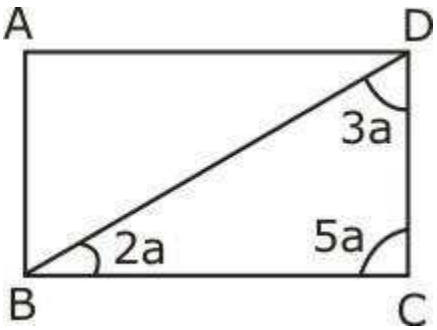
Marks (2)

Q 11 In the figure given below ,ABCD and PQRC are rectangles and Q is the mid – point of AC. Prove that PR = ½ AC.



Marks (2)

Q 12 Find the values of a and also find angles related to a as shown in the figure.



Marks (3)

Q 13 Prove that angle bisectors of a parallelogram form a rectangle.

Marks (3)

Q 14 ABC is an isosceles triangle with AB = AC and let D, F, E be the mid-points of BC, CA and AB respectively. Show that AD is perpendicular to EF and AD bisects EF.

Marks (3)

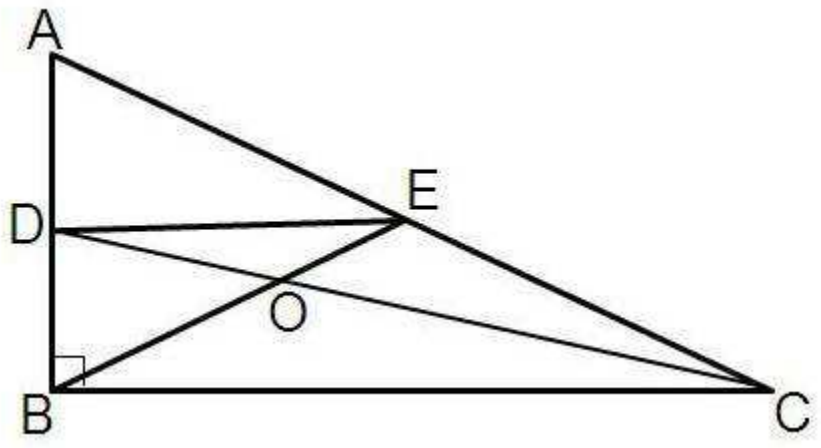
Q 15 In a triangle ABC median AD is produced to X such that AD = DX. Prove that ABXC is a parallelogram.

Marks (3)

Q 16 ABCD is parallelogram. P is a point on AD such that AP = 1/3 AD and Q is a point on BC such that CQ = 1/3 BC. Prove that AQCP is a parallelogram.

Marks (3)

Q 17 In the figure given below , triangle ABC is right – angled at B. Given that AB = 9 cm, AC = 15 cm and D, E are the mid – points of the sides AB and AC respectively, calculate the area of trapezium DECB.



Marks (3)

Q 18 ABCD is a rhombus. AD is produced to E so that DE = DC and EC produced meets AB produced in F. Prove that BF = BC.

Marks (4)

Q 19 In a quadrilateral ABCD, CO and DO are the bisectors of $\angle$C and $\angle$D respectively. Prove that

$$\angle COD = \frac{1}{2}(\angle A + \angle B)$$

Marks (4)

Q 20 AD is the median of $\triangle$ABC. E is the mid point of AD. BE produced meet AC at F. Show that AF=(1/3)AC.

Marks (4)

Q 21 Show that the quadrilateral formed by joining the mid point of the consecutive sides of a rectangle is a rhombus.

Marks (4)

Q 22 P is the mid-point of side AB of a parallelogram ABCD. A line through B parallel to PD meets DC at Q and AD produced at R. prove that AR = 2BC.

Marks (4)

Q 23 P,Q,R are, respectively, the mid points of sides AB, BC and CA and of a triangle ABC. PR and AQ meet at X. BR and PQ meet at Y. Prove that XY = ¼ AB.

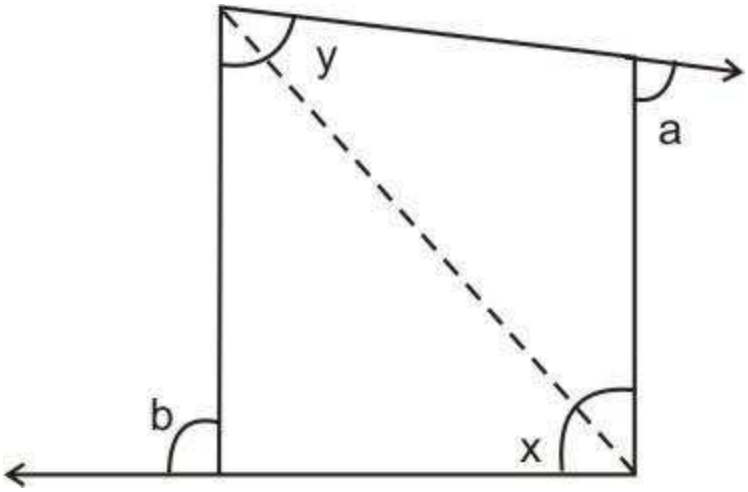
Marks (4)

Most Important Questions

Q 1 The angle of a quadrilateral are respectively 100°,90°, 95°. Find the fourth angle.

Q 2 In a quadrilateral ABCD, the angles A,B,C and D are in the ratio 1:2:3:4. Find the measure of each angles of the quadrilateral.

Q 3 The sides BA and DC of a quadrilateral ABCD are produced as shown in fig. Prove that a + b = x + y.



Q 4 The angles of a quadrilateral are in the ratio 3 : 5 : 9 : 13. Find all the angles of the quadrilateral.

Q 5

In a quadrilateral ABCD, AO and BO are the bisectors of $\angle A$ and $\angle B$ res

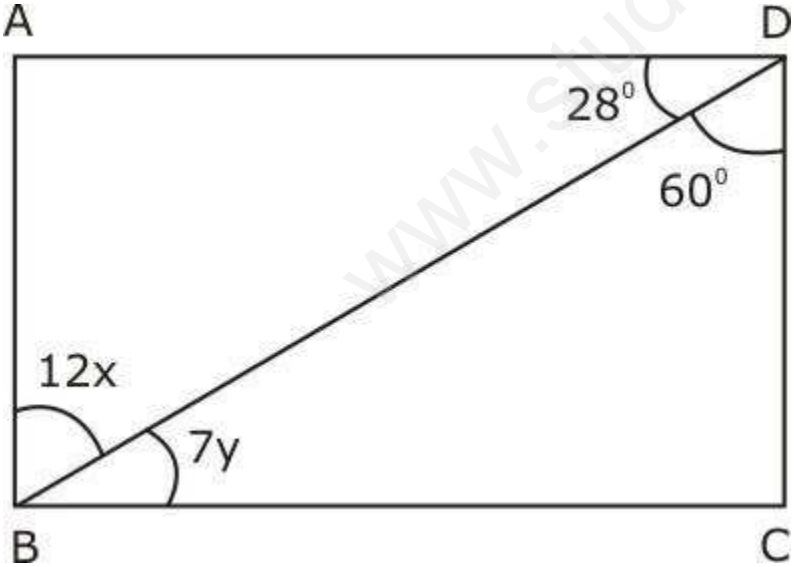
Prove that $\angle AOB = \frac{1}{2}(\angle C + \angle D)$.

Q 6 In a parallelogram ABCD, prove that sum of any two consecutive angles is 180^0.

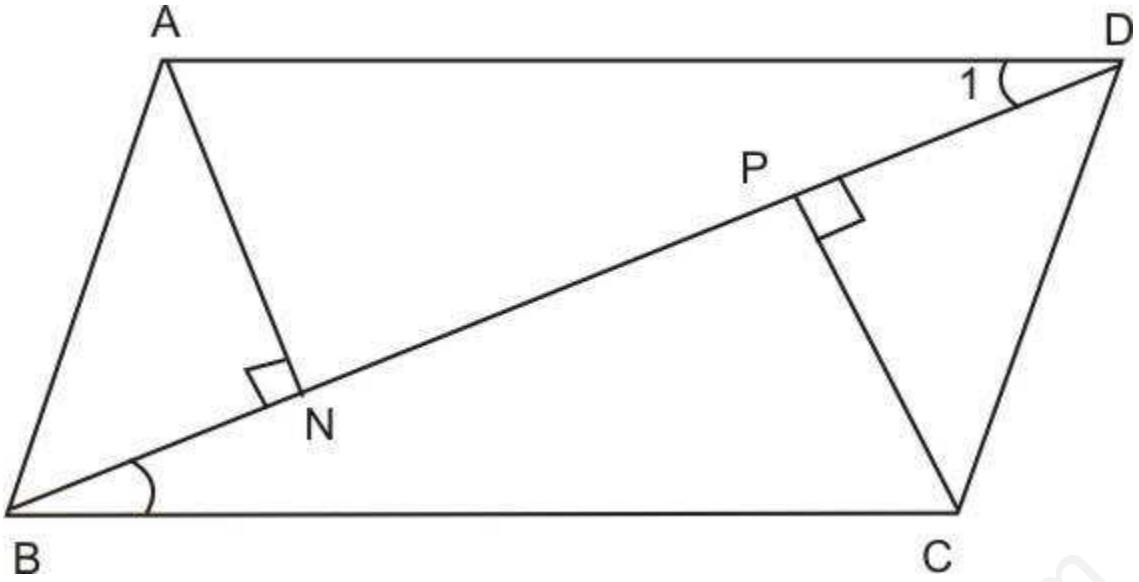
Q 7

In a parallelogram ABCD, $\angle D = 115°$, determine the measure of $\angle A$ and $\angle B$.

Q 8 In the given figure, ABCD is a parallelogram. Compute the values of x and y.



Q 9 In the given figure, AN and CP are perpendicular to the diagonal BD of a parallelogram ABCD.



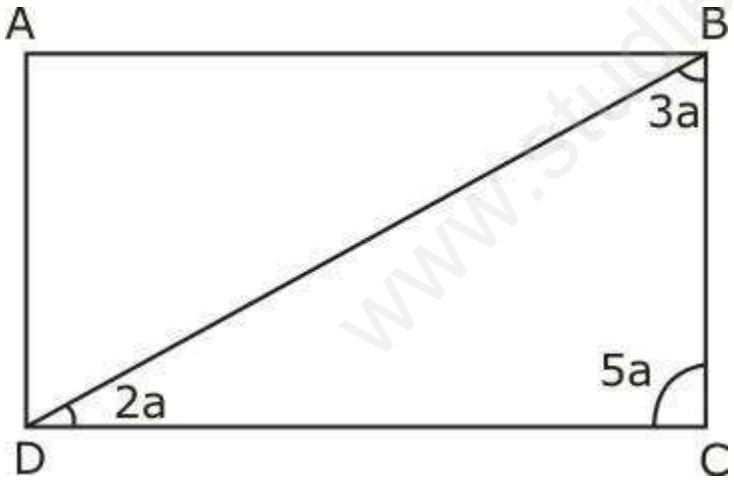
Prove that :

(i) $\triangle ADN \cong \triangle CBP$

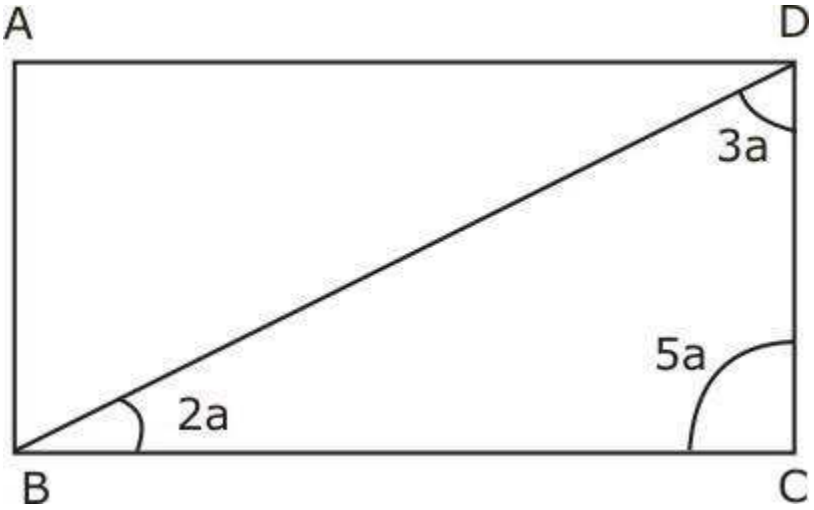
(ii) $AN = CP$

Q 10 If ABCD is a quadrilateral in which $AB \parallel CD$ and $AD = BC$, prove that $\angle A = \angle B$.

Q 11 In the given figure, find the four angles A, B, C and D in the parallelogram ABCD.



Q 12 In the figure given below,find all the angles of triangle BCD.



Q 13 Prove that angle bisectors of a parallelogram forms a rectangle.

Q 14 AB and CD are the two parallel lines which are cut by a transversal l in point X and Y respectively. The bisectors of interior angles intersect in P and Q. form a parallelogram. Is it a rectangle?

Q 15 ABCD is a Rhombus AD is produced to E so that DE = DC and EC produced meets AB produced in F. prove that BF = BC.

Q 16 In a quadrilateral ABCD, CO and DO are the bisector of $\angle C$ and $\angle D$ respectively. Prove that $\angle COD = (1/2)(\angle A + \angle B$

Q 17 ABC be an isosceles triangle with AB = AC and let D, E, F are the mid-points of BC, CA and AB respectively. Show that AD perpendicular to EF ad AD bisector of EF.

Q 18 In triangle ABC, AD is the median through A and E is the mid-point of AD. BE produced meets AC in F proved that AF = 1/3 AC

Q 19 Show that the quadrilateral formed by joining the mid point of the consecutive sides of a rectangle is a rhombus.

Q 20 ABCD is parallelogram. P is a point on AD such that AP = 1/3 AD and Q is a point on BC such that CQ = 1/3 BP. Prove that AQCP is a parallelogram.

Q 21 In a triangle ABC median AD is produced to X such that AD = DX. Prove that ABXC is a parallelogram.

Q 22 P is the mid-point of side AB of a parallelogram ABCD. A line through B parallel to PD meets DC at Q and AD produced at R. prove that AR = 2BC.

Q 23 P, Q, R are, respectively, the mid points of sides BC,CA and AB of a triangle ABC. PR and BQ meet at X. CR and PQ meet at Y. prove that XY = ¼ BC