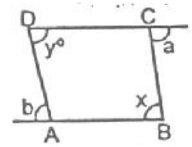
Chapter 9

ASSIGNMENT

OBJECTIVE EX. - 9.1

1. The sides BA and DC of the parallelogram ABCD are produced as shown in the figure then

(A) a + x = b + y (B) a + y = b + a (C) a + b = x + y (D) a - b = x - y

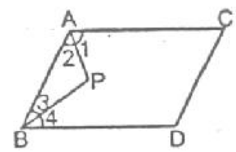


2. The sum of the interior angles of polygon is three times the sum of its exterior angles. Then numbers of sides in polygon is

(A) 6 (B) 7 (C) 8 (D) 9

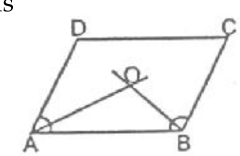
3. In the adjoining figure, AP and BP are angle bisector of ∠A and ∠B which meet at a point P of the parallelogram ABCD. Then 2∠APB =

(A) ∠A + ∠B (B) ∠A + ∠C (C) ∠B + ∠D (D) ∠C + ∠D



4. In a parallelogram the sum of the angle bisector of two adjacent angles is

(A) 30^0 (B) 45^0 (C) 60^0 (D) 90^0

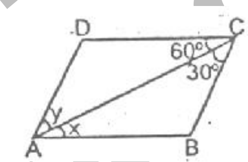


5. In a parallelogram ABCD ∠D = 60^0 then the measurement of ∠A

(A) 120^0 (B) 65^0 (C) 90^0 (D) 75^0

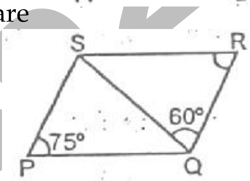
6. In the adjoining figure ABCD, the angles x and y are

(A) 60^0, 30^0 (B) 30^0, 60^0 (C) 45^0, 45^0 (D) 90^0 , 90^0



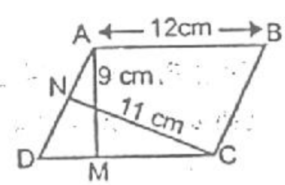
7. From the figure parallelogram PQRS, the values of ∠SQP and ∠QSP are are

(A) 45^0, 60^0 (B) 60^0, 45^0 (C) 70^0, 35^0 (D) 35^0, 70



8. In parallelogram ABCD, AB = 12 cm. The altitudes corresponding to the sides AB and AD are respectively 9 cm and 11 cm. Find AD.

(A) $\frac{108}{11}$cm (B) $\frac{108}{10}$cm (C) $\frac{99}{10}$cm (D) $\frac{108}{17}$cm



9. In ΔABC, AD is a median and P is a point is AD such that AP : PD = 1 : 2 then the area of ΔABP =

(A) $\frac{1}{2}$ × Area of ΔABC (B) $\frac{2}{3}$ × Area of ΔABC (C) $\frac{1}{3}$ × Area of ΔABC (D) $\frac{1}{6}$ × Area of ΔABC

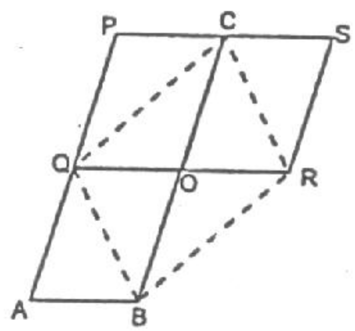
10. In ΔABC if D is a point in BC and divides it the ratio 3 : 5 i.e., if BD : DC = 3 : 5 then, ar (ΔADC) : ar(ΔABC) = ?

(A) 3 : 5 (B) 3 : 8 (C) 5 : 8 (D) 8 : 3

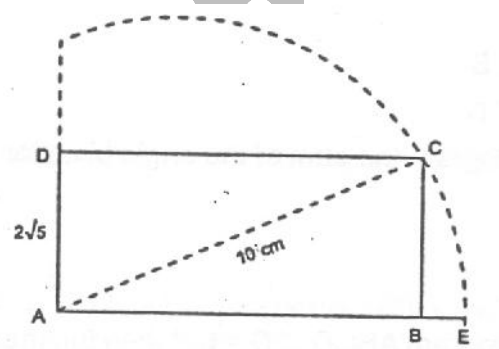
SUBJECTIVE EX. - 9.2

1. If each diagonal of a quadrilateral separates into two triangles of equal area, then show that the quadrilateral is a parallelogram.

2. In the adjoining figure, PQRS and PABC are two parallelograms of equal area. Prove that QC $\parallel$ BR.



3. In the figure ABCD is rectangle inscribed in a quadrant of a circle of radius 10 cm. If AD = $2\sqrt{5}$ cm. Find the area of the rectangle.

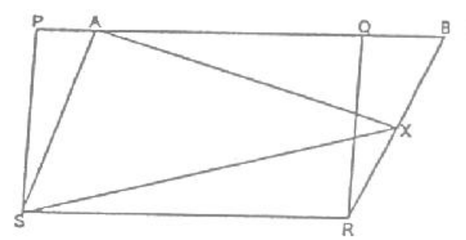


4. P and Q are any two points lying on the sides DC and AD respectively of parallelogram ABCD. Prove that : ar (ΔAPB) = ar(ΔBQC).

5. In the figure, given alongside, PQRS and ABRS are parallelograms and X is any point on side BR. Prove that :

(i) ar(PQRS) = ar(ABRS)

(ii) ar(AXS) = $\frac{1}{2}$ ar(PQRS)

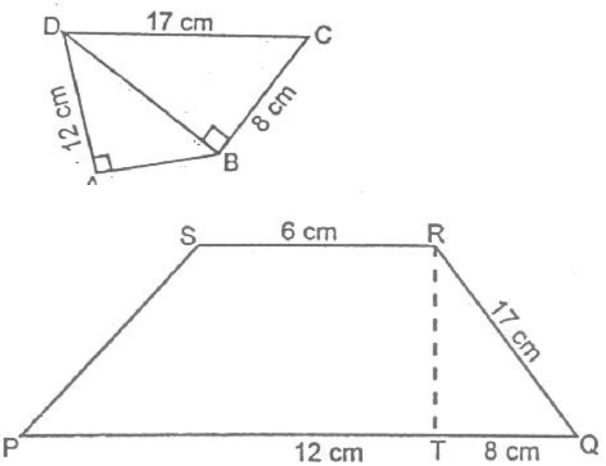


6. Find the area a rhombus, the lengths of whose diagonals are 16 cm and 24 cm respectively.

7. Find the area of trapezium whose parallel sides are 8 cm and 6 cm respectively and the distance between these sides is 8 cm.

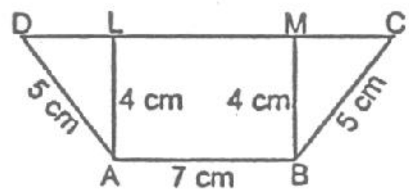
8. (i) Calculate the area of quad. ABCD, given in fig. (i)

(ii) Calculate the area of trap. PQRS, given in fig. (ii).



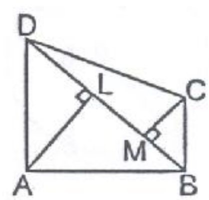
(i) **(ii)**

9. In figure, ABCD is a trapezium in which AB ∥ DC; AB = 7 cm; AD = BC = 5 cm and the distance between AB and DC is 4 cm.

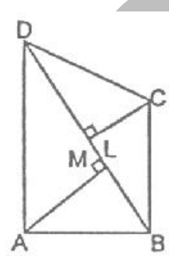


Find the length of DC and hence, find the area of trap. ABCD.

10. BD is one of the diagonals of quadrilateral ABCD. If AL ⊥ BD and CM ⊥ BD, show that : ar(quadrilateral ABCD) = $\frac{1}{2}$ × BC × (AL + CM).



11. In the figure, ABCD is a quadrilateral in which diag. BD = 20 cm. If AL ⊥ BD and CM ⊥ BD, such that : AL = 10 cm and CM = 5 cm, find the area of quadrilateral ABCD.

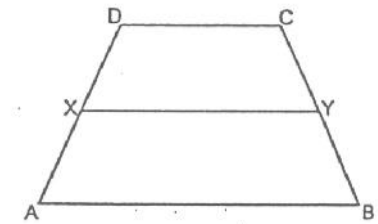


12. In fig. ABCD is a trapezium in which AB ∥ DC and DC = 40 cm and AB = 60 cm. If X and Y are, respectively, the mid - points of AD and BC, prove that

(i) XY = 50 cm

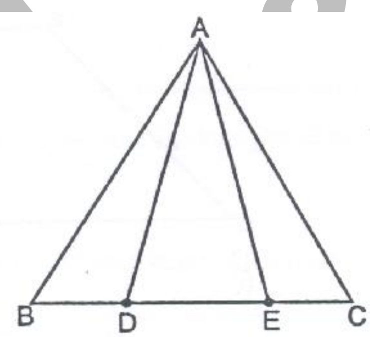
(ii) DCYX is a trapezium

(iii) Area (trapezium DCYX) $= \frac{9}{11}$ Area (trapezium XYBA)



13. Show that a median of a triangle divides it into two triangles of equal area.

14. In the figure, given alongside, D and E are two points on BC such that BD = DE = EC. Prove that : ar(ABD) = ar(ADE) = ar(AEC)



15. In triangle ABC, if a point D divides BC in the ratio 2 : 5, show that : ar(ΔABD) : ar(ΔACD) = 2 : 5.