Chapter 8

ASSIGNMENT

OBJECTIVE EX. 8.1

1. In a parallelogram ABCD, $\angle D = 105^0$, then the $\angle A$ and $\angle B$ will be.

(A) $105^0, 75^0$ (B) $75^0, 105^0$ (C) $105^0, 105^0$ (D) $75^0, 75^0$

2. In a parallelogram ABCD diagonals AC and BD intersects at O and AC = 12.8 cm and BD = 7.6 cm, then the measure of OC and OD respectively equal to :

(A) 1.9 cm, 6.4 cm (B) 3.8 cm, 3.2 cm (C) 3.8 cm, 3.2 cm (D) 6.4 cm, 3.8 cm

3. Two opposite angles of a parallelogram are $(3x - 2)^0$ and $(50 - x)^0$ then the value of x will be :

(A) 17^0 (B) 16^0 (C) 15^0 (D) 13^0

4. When the diagonals of a parallelogram are perpendicular to each other then it is called.

(A) Square (B) Rectangle (C) Rhombus (D) Parallelogram

5. In a parallelogram ABCD, E is the mid-point of side BC. If DE and AB when produced meet at F then :

(A) AF = $\frac{1}{2}$ AB (B)AF = 2AB (C) AF = 4AB (D) Data Insufficient

6. ABCD is a rhombus with $\angle ABC = 56^0$, then the $\angle ACD$ will be.

(A) 56^0 (B) 62^0 (C) 124^0 (D) 34^0

7. In a triangle, P,Q, and R are the mid-points of the sides BC, CA and AB respectively. If AC = 16 cm, BC = 20 cm and AB = 24 cm then the perimeter of the quadrilateral ARPQ will be.

(A) 60 cm (B) 30 cm (C) 40 cm (D) None

8. LMNO is a trapezium with LM ‖ NO. If P and Q are the mid-points of LO and MN respectively and LM = 5 cm and ON = 10 cm then PQ =

(A) 2.5 m (B) 5 cm (C) 7.5 cm (D) 15 cm

9. In a Isosceles trapezium ABCD if $\angle A = 45^0$ then $\angle C$ will be.

(A) 90^0 (B) 135^0 (C) 90^0 (D) None

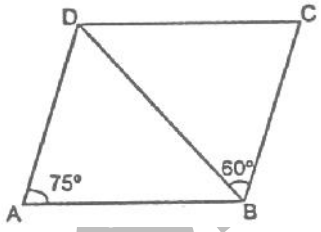
10. In a right angle triangle ABC is right angled at B. Given that AB = 9 cm, AC = 15 cm and D, E are the mid-points of the sides AB and AC respectively, then the area of ΔADE=

(A) 67.5 cm^2 (B) 13.5 cm^2 (C) 27 cm^2 (D) Data insufficient

SUBJECTIVE EX. - 8.2

1. Find the measures of all the angles of a parallelogram , if one angle is 24^0 less than twice the smallest angle.

2. In the following figure, ABCD is a parallelogram in which $\angle DAB = 75^0$ and $\angle DBC = 60^0$. Find $\angle COB$ and $\angle ADB$.



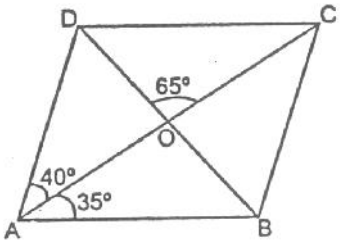
3. In the following figure, ABCD is a parallelogram $\angle DAO = 40^0$, $\angle BAO = 35^0$ and $\angle COD = 65^0$. Find

(i) $\angle ABO$

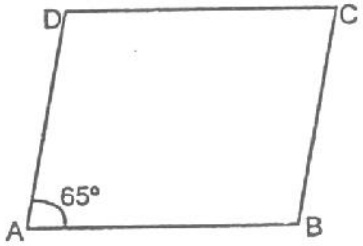
(ii) $\angle ODC$

(iii) $\angle ACB$

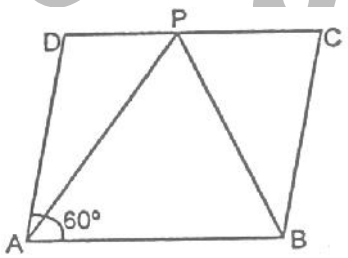
(iv) $\angle CBD$



4. In the following figure, ABCD is a parallelogram in which $\angle A = 65^0$. Find $\angle B$, $\angle C$ and $\angle D$.



5. In the following figure, ABCD is a parallelogram in which $\angle A = 60^0$. If the bisectors of $\angle A$ and $\angle B$ meet at P, prove that $\angle APB = 90^0$. Also, prove that AD = DP, PC = BC and DC = 2AD.



OBJECTIVE EX. 8.3

1. When the opposite sides of quadrilateral are parallel to each other then it is called.

(A) Square (B) Parallelogram (C) Trapezium (D) Rhombus

2. In a ΔABC, D, E and F are respectively, the mid-points of BC, CA and AB. If the lengths of side AB, BC and CA are 17 cm, 18 cm and 19 cm respectively, then the perimeter of ΔDEF equal to :

(A) 54 cm (B) 18 cm (C) 27 cm (D) 13.5 cm

3. When only one pair of opposite sides of a quadrilateral parallel to each other it is called.

(A) Square (B) Rhombus (C) Parallelogram (D) Trapezium

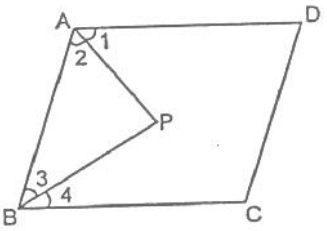
4. When the diagonals of a parallelogram are equal but not perpendicular to each other it is called a.

(A) Square (B) Rectangle (C) Rhombus (D) Parallelogram

5. When each angle of a rhombus equal to 90.0, it is called a.

(A) Square (B) Rectangle (C) Trapezium (D) Parallelogram

6. In the adjoining figure, AP and BP are angle bisectors of ∠A and ∠B which meets at P on the parallelogram ABCD. Then 2∠APB =



(A) ∠C + ∠D (B) ∠A + ∠C (C) ∠B + ∠D (D) 2∠C

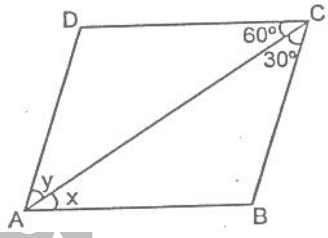
7. In a quadrilateral ABCD, AO & DO are angle bisectors of ∠A and ∠D and given that ∠C = 105^0, ∠B = 70^0 then the ∠AOD is :

(A) 67.5^0 (B) 77.5^0 (C) 87.5^0 (D) 99.75^0

8. In a parallelogram the sum of the angle bisectors of two adjacent angle is :

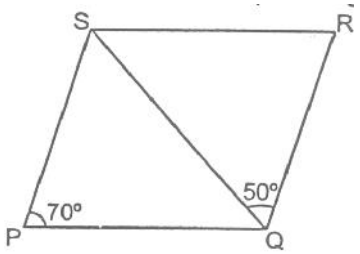
(A) 30^0 (B) 45^0 (C) 60^0 (D) 90^0

9. In the adjoining parallelogram 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

10. From the figure find the value of ∠SQP and ∠QSP of parallelogram PQRS.



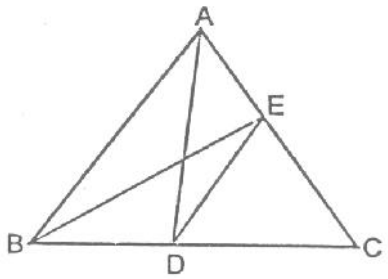
(A) 60^0, 50^0 (B) 60^0, 45^0 (C) 70^0, 35^0 (D) 35^0, 70^0

SUBJECTIVE EX. 8.4

1. Prove that the line joining the mid-points of the diagonals of a trapezium is parallel to each to the parallel sides and is equal to half of the difference of these sides.

2. ABCD is a parallelogram. P is a point on AD such that AP = $\frac{1}{3}$ AD. Q is a point on BC such that CQ = $\frac{1}{3}$ BC. Prove that AQCP is a parallelogram.

3. In the following figure, AD is a median and DE ∥ AB. Prove that BE is a median.



4. Prove that "If a diagonal of a parallelogram bisects one of the angles of the parallelogram, it also bisects the second angle and then the two diagonals are perpendicular to each other.

5. Prove that the figure formed by joining the mid-points of the consecutive sides of a quadrilateral is a parallelogram.

6. In a parallelogram ABCD, the bisector of ∠A also bisects BC at P. Prove that AD = 2AB.

7. The diagonals of parallelogram ABCD intersect at O. A line through O intersects AB at X and DC at Y. Prove that OX = OY.

8. Show that the quadrilateral formed by joining the mid points of the sides of square is also a square.

9. ABCD is a trapezium in which side AB is parallel to side DC and E is the mid-point of side AD. If F is a point on side BC such that segment EF is parallel to side DC. Prove that EF = $\frac{1}{2}$ (AB + DC).

10. In ΔABC, AD is the median through A and E is the mid-point of AD. BE produced meets AC in F. Prove that AF= $\frac{1}{3}$ AC.