

SUBJECT-MATHEMATICS, CLASS – IX
CHAPTER 8-(QUADRILATERALS)

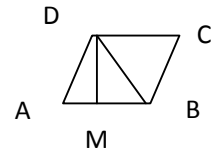
MCQ type question

1. Two angles of a quadrilateral are 60° and 90° and other two angles are in the ratio 8:13, then remaining two angles are
 a) $90^\circ, 120^\circ$ b) $80^\circ, 130^\circ$ c) $100^\circ, 130^\circ$ d) $80^\circ, 120^\circ$

2. A diagonal of a rectangle is inclined to one side of the rectangle at 35° . The acute angle between the diagonals is
 a) 65° b) 60° c) 55° d) 70°

3. Three exterior angles of a quadrilateral taken in order are $72^\circ, 98^\circ$ and 102° . The fourth exterior angle is
 a) 88° b) 99° c) 82° d) 92°

4. In figure, ABCD is a rhombus. If $\angle DAB = 60^\circ$ and $DM \perp AB$, then $\angle ABD$ is



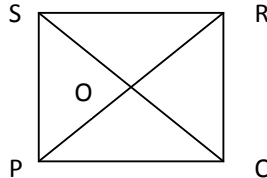
- a) 50° b) 40° c) 60° d) 70°
5. The quadrilateral formed by joining the mid points of the sides of a quadrilateral PQRS, taken in order, is a rectangle if
 a) PQRS is a rectangle b) PQRS is a parallelogram
 c) diagonals of PQRS are perpendicular d) diagonals of PQRS are equal.
6. In a parallelogram ABCD, $\angle B = 75^\circ$. Then $\angle A + \angle C$ is equal to
 a) 110° b) 210° c) 150° d) 185°
7. ABCD is a rhombus and both of the diagonals intersect at O. If $AO=4\text{cm}$, $BO=3\text{cm}$ then perimeter of the rhombus is
 a) 18cm b) 20cm c) 21cm d) 22cm
8. If angles $\angle A, \angle B, \angle C$ and $\angle D$ of the quadrilateral ABCD, taken in a order, are in the ratio 3:7:6:4, then ABCD is a
 a) rhombus b) parallelogram c) trapezium d) kite
9. Given an equilateral triangle ABC in which D, E and F are the midpoints of AB, BC and AC respectively, then the quadrilateral BEFD is exactly a
 a) rectangle b) parallelogram c) square d) rhombus
10. Given a quadrilateral ABCD such that $\angle B = 90^\circ$ and diagonal AC and BD bisect each other at O then quadrilateral is a
 a) rhombus b) parallelogram c) trapezium d) rectangle

VSAQ type question

11. In a triangle ABC, $\angle B = 90^\circ$. If side AB = 6cm, side BC=8cm and D is midpoint of AC, then find the length of BD.
12. The diagonal AC and BD of a parallelogram ABCD intersect each other at the point O, if $\angle DAC = 32^\circ$ and $\angle AOB = 70^\circ$ then find $\angle DBC$.
13. In a parallelogram ABCD, if $\angle B$ exceeds $\angle A$ by 58° , What is the measure of $\angle B$?

14. In figure, PQRS is a rectangle if $\angle RPQ = 30^\circ$,

then find the value of $(\angle SQR + \angle SOR)$.



15. Two adjacent angles of a rhombus are $(3x-40)^\circ$ and $(2x+20)^\circ$. Find the measurement of the greater angle.

Fill in the blanks

16. P is the midpoint of side BC of a parallelogram ABCD such that $\angle BAP = \angle DAP$. If AD = 10cm, then CD = _____ .
17. If ABCD is a parallelogram with adjacent angles $\angle A$ and $\angle B$ equal to each other, then the parallelogram is a _____ .
18. In a quadrilateral ABCD, CO and DO are angle bisectors of $\angle C$ and $\angle D$ respectively. Then $\angle COD = \frac{1}{2}$ (_____).
19. Consecutive angles of a parallelogram are _____ .
20. If opposite angles of a quadrilateral are equal, then it is necessarily a - _____ .

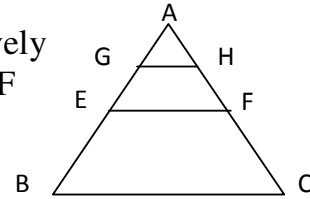
SHORT ANSWER TYPE QUESTIONS -I (2X5 = 10)

1. In quadrilateral ABCD, $\angle A + \angle C = 140^\circ$, $\angle A : \angle C = 1:3$ and $\angle B : \angle D = 5:6$. Find $\angle A$, $\angle B$, $\angle C$ and $\angle D$.
2. ABCD is a rectangle; diagonals AC and BD intersect each other at P. $\angle APD = 52^\circ$. Find $\angle ACB$ and $\angle ABD$.
3. In a parallelogram ABCD, $\angle A = (3x - 2)^\circ$ and $\angle C = (2x + 23)^\circ$. Find x. Hence find $\angle A$ and $\angle B$.
4. ABCD is a rectangle. Diagonals intersect at O. AC is produced to E. If $\angle ECD = 146^\circ$, find $\angle AOB$.
5. In $\triangle ABC$, E is the mid point of median AD such that BE produced meets AC at F. AC = 10.5 cm. Find AF.

SHORT ANSWER TYPE QUESTIONS -- II (3 × 5 = 15)

1. ABCD is a parallelogram. AB is produced to E so that BE = AB .Prove that ED bisect BC.

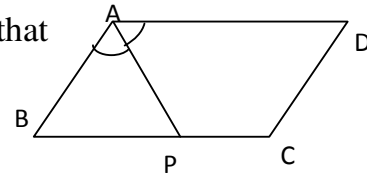
2. E and F are midpoints of the sides AB and AC respectively of the ΔABC . If G and H be the midpoints of AE and AF respectively, then prove that $GH \parallel BC$ and $GH = \frac{1}{4} BC$.



3. ABCD is a parallelogram .E and F are mid-points of AB and CD respectively. GH is any line intersecting AD, EF and BC at G,P and H respectively. Prove that GP = PH.

4. E is the midpoint of a median AD of a ΔABC and BE is produced to meet AC at F. Show that $AF = \frac{1}{3} AC$.

5. P is the mid-points of side BC of a $\parallel gm$ ABCD such that $\angle BAP = \angle DAP$. Prove that $AD = 2CD$.



LONG ANSWER TYPE QUESTION (5 × 4 = 20)

- E and F are respectively the mid points the of non parallel sides AD and BC of a trapezium ABCD. Prove that $EF \parallel AB$ and $EF = \frac{1}{2} (AB + CD)$
- BM and CN are perpendiculars to a line passing through the vertex A of a triangle ABC .If L is the midpoint of BC, prove that $LM = LN$.
- P , Q and R are respectively ,the mid points of sides BC ,CA and AB of a ΔABC . PR and BQ meet at X. CR and PQ meet at Y. Prove that $XY = \frac{1}{4} BC$.
- Prove that the line segment joining the mid –points of the diagonals of a trapezium is parallel to each of the parallel sides and is equal to half the difference of these sides.
- P is the mid-point of side AB of a $\parallel ABCD$. A line through B parallel to PD meets DC at Q and AD produced at R. Prove that

- $AR = 2BC$
- $BR = 2 BQ$

