

Board – CBSE

Class – 9

Topic – Quadrilaterals

Multiple Choice Question Type

- What is the sum of angles of quadrilaterals?
 - 90
 - 180
 - 360
 - 270
- A quadrilateral with only one pair of opposite sides parallel is called:
 - Trapezium
 - Square
 - Rectangle
 - Rhombus
- The consecutive angles of a parallelogram are
 - Complementary
 - Supplementary
 - Equal
 - None of these
- If in a parallelogram its diagonals bisect each other and are equal then it is a,
 - Square
 - Rectangle
 - Rhombus
 - Parallelogram
- If in a parallelogram its diagonals bisect each other at right angles and are equal, then it is a
 - Square
 - Rectangle
 - Rhombus
 - Parallelogram
- The quadrilateral formed by joining the mid-points of the sides of a quadrilateral ABCD taken in order is a square only if
 - ABCD is a rhombus
 - Diagonals of ABCD are equal
 - Diagonals of ABCD are equal and perpendicular
 - Diagonals of ABCD are perpendicular
- Which of the following is not true?
 - Every square is a rectangle
 - Every rectangle is a quadrilateral
 - Every parallelogram is a trapezium
 - None of these
- Which of the following is not true for a parallelogram?
 - Diagonals bisect each other
 - Opposite sides are equal
 - Opposite angles are equal
 - Opposite angles are bisected by the diagonals

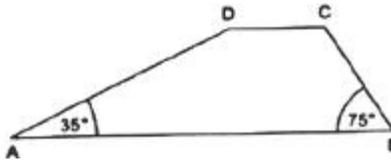
ANSWERS

- | | | | |
|--------|--------|--------|-------|
| 1. III | 2. I | 3. II | 4. II |
| 5. I | 6. III | 7. III | 8. IV |

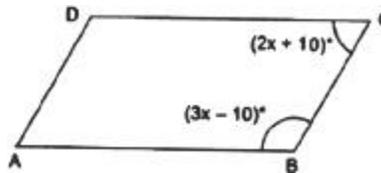
Long Answer Type Question

1. If the bisectors of angles of a quadrilateral enclose a rectangle, then show that it is a parallelogram.
2. L, M, N, K are mid-points of sides BC, CD, DA and AB respectively of square ABCD, prove that DL, DK, BM and BN enclose a rhombus.
3. PQRS is a parallelogram. PS is produced to meet M so that SM = SR and MR is produced to meet PQ produced at N. Prove that QN = QR
4. In a $\triangle ABC$, DE is parallel to BC and D is the mid-point of side AB. Find the perimeter of $\triangle ABC$ when AE = 4.5 cm, DE = 5 cm and DB = 3.5 cm.
5. If an angle of a parallelogram is $\frac{4}{5}$ of its adjacent angle, then find the measures of all the angles of the parallelogram.
6. ABCD is a trapezium in which AB is parallel to CD. If $\angle A = 36^\circ$ and $\angle B = 81^\circ$, then find $\angle C$ and $\angle D$.
7. In a $\triangle ABC$, DE is parallel to BC and D is the mid-point of side AB. Find AE and BC if DE = 6 cm and EC = 5 cm.
8. In a parallelogram ABCD find the measure of all the angles if one angle measures 68° .
9. The lengths of diagonals of a rhombus are 24 cm and 18 cm respectively. Find the length of each side of the rhombus.
10. In a parallelogram ABCD find the measure of all the angles if one of its angles is 15° less than twice the smallest angle.
11. ABCD is a parallelogram such that its diagonals are equal. What is the measure of $\angle ABC$?
12. In a parallelogram ABCD, if $\angle C = 80^\circ$ then what is the measure of $\angle A$?
13. In a parallelogram ABCD, if $\angle A$ is $\frac{4}{5}$ of $\angle B$, then what is $\angle A$?
14. Each side of a rhombus is 15 cm. If the length of one of its diagonals is 18 cm, then what is the length of the other diagonal?
15. ABCD is a rhombus such that $\angle ADB = 50^\circ$, then what is the measure of $\angle ACB$?

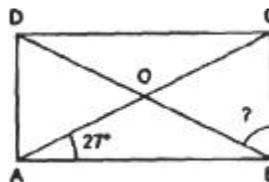
16. A diagonal of a rectangle is inclined to one side of the rectangle at 25° . What is the measure of acute angle between the diagonals?
17. Diagonals of a parallelogram ABCD intersect at O. if $\angle BOC = 90^\circ$ and $\angle BDC = 40^\circ$, then what is the measure of $\angle OAB$?
18. In a $\triangle ABC$, D, E and F are mid-points of sides AB, AC and BC respectively. If DE and DF are joined, find the perimeter of BDEF.
19. A diagonal of a parallelogram divides it into how many congruent triangles?
20. In the adjoining figure, ABCD is a trapezium in which $AB \parallel DC$. If $\angle A = 35^\circ$ and $\angle B = 75^\circ$, then find $\angle C$ and $\angle D$.



21. In a parallelogram ABCD, if $(3x - 10)^\circ = \angle B$ and $(2x + 10)^\circ = \angle C$, then find the value of x.



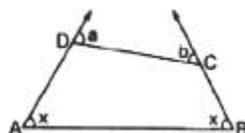
22. The adjoining figure is a rectangle whose diagonals AC and BD intersect at O. If $\angle OAB = 27^\circ$, then find $\angle OBC$.



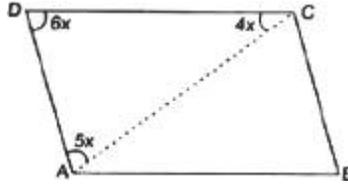
23. In the figure, AX and CY are respectively the bisectors of opposite angles A and C of a parallelogram ABCD. Show that $AX \parallel CY$

24. The sides AD and BC of a quadrilateral are produced as shown in the given figure.

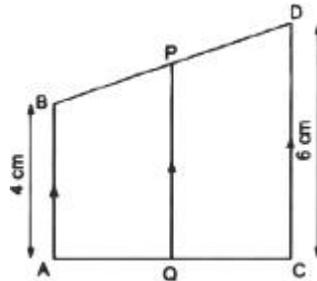
Prove that $x = \frac{a+b}{2}$



25. In the adjoining figure, ABCD is a ||gm. Find the angles A, B, C and D.



26. In the adjacent figure, $AB \parallel QP \parallel CD$, Q is the mid-point of AC. If $AB = 4$ cm and $CD = 6$ cm then find PQ.



27. In the adjoining figure, ABCD and PQRB are rectangles where Q is the midpoint of BD. If $QR = 5$ cm, then find the length of AB.

