

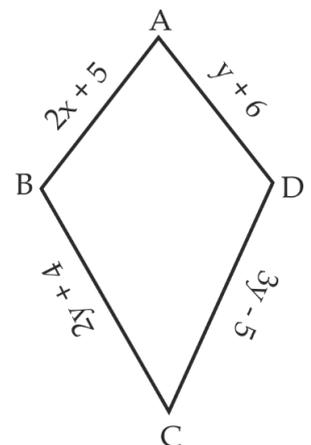
SINGLE OPTION CORRECT

- A simple closed curve made up of only line segments is called a
 - Polygon
 - Circle
 - Triangle
 - Rectangle
- Which of the following is not convex polygon
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 - 
 - 
 - 
- Sum of the Measures of the Exterior Angles of a polygon is
 - 180
 - 360
 - 270
 - 0
- A rectangle with sides of equal length is called
 - Parallelogram
 - Square
 - Rhombus
 - Quadrilateral
- Which of the following quadrilaterals has two pairs of adjacent sides equal & its diagonals intersect at 90° ?
 - Square
 - Kite
 - Rhombus
 - Rectangle
- The perimeter of a parallelogram whose parallel sides have lengths equal to 20 cm and 10 cm is:
 - 30
 - 40
 - 50
 - 60
- ABCD is a rhombus in which the altitude from D to side AB bisects AB. Then $\angle A$ & $\angle B$ respectively, are _____
 - $60^\circ, 120^\circ$
 - $120^\circ, 60^\circ$
 - $80^\circ, 100^\circ$
 - $100^\circ, 80^\circ$
- The exterior angle of a regular polygon is one-third of its interior angle. How many sides does the polygon has?
 - 10
 - 8
 - 9
 - 13
- Which of the following statements is CORRECT?
 - The diagonals of a parallelogram are equal
 - The diagonals of a rectangle are perpendicular to each other
 - If the diagonals of a quadrilateral intersect at right angles, it is not necessarily a rhombus.
 - Every quadrilateral is either a trapezium or a parallelogram or a kite

10. The ratio of two sides of a parallelogram is 3:5 and its perimeter is 48 cm. Then, the sides of the parallelogram are _____
- (A) 9 cm, 16 cm (B) 9 cm, 15 cm (C) 8 cm, 15 cm (D) 6 cm, 10 cm
11. Which of the following can never be the measure of exterior angle of a regular polygon?
- (A) 22 (B) 36 (C) 45 (D) 30
12. Rohit has 6 wooden sticks of equal length. He wants to join all of them in such a way that they make a regular polygon. At what internal angle he has to join wooden stick with each other?
- (A) 105 (B) 120 (C) 115 (D) 90
13. Select the INCORRECT statement:
- (A) Every rectangle is a trapezium
- (B) A quadrilateral can be drawn if all four sides and one angle is known
- (C) Triangle is a polygon whose sum of exterior angles is double the sum of interior angles
- (D) If diagonals of a quadrilateral are equal, it must be a rectangle.
14. The number of sides of a regular polygon, whose each exterior angle has a measure of 30° is _____
- (A) 12 (B) 6 (C) 8 (D) 10
15. Atul is playing in a playground which is of the form of a parallelogram. He observes that the diagonals of the playground are 80 m and 60 m long. So, the playground is in the shape of _____
- (A) Rectangle (B) Rhombus (C) Kite (D) Square
16. One angle of a quadrilateral is 150° and the other three angles are equal. Find the measure of other three angles:
- (A) 70° (B) 75° (C) 85° (D) 90°
17. Two adjacent sides AB and BC of a parallelogram ABCD are in the ratio of 5:3. If the perimeter is 200 cm, then the lengths of AB and BC are:
- (A) 25 cm, 50 cm. (B) 40 cm, 37.50 cm. (C) 62.50 cm, 37.50 cm. (D) 60 cm, 62.50 cm.

18. The value of the variable x and y in the given kite are respectively:

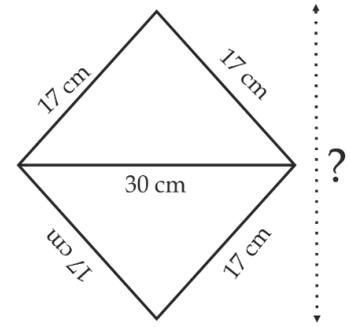
- (A) 5 and 9 (B) 9 and 5
- (C) 5 and 7 (D) 7 and 5



19. In a quadrilateral ABCD, if AO and BO be the bisectors of $\angle A$ and $\angle B$ respectively, $\angle C = 70^\circ$ and $\angle D = 30^\circ$, then $\angle AOB$ is:
- (A) 40° (B) 80°
- (C) 50° (D) 100°

20. A car jack is shaped like rhombus. The sides of car jack are 17 cm long. When the horizontal distance between the vertices is 30 cm, the vertical distance between the other two vertices is:

- (A) 8 cm (B) 16 cm
(C) 23 cm (D) 30 cm



21. The angles of a quadrilateral are in the ratio 1 : 2 : 3 : 4, the angles are :

- (A) 36°, 72°, 108°, 144° (B) 15°, 130°, 45°, 150° (C) 45°, 110°, 55°, 150° (D) None of these

22. ABCD is a trapezium in which $AB \parallel CD$. If $\angle ADC = 2\angle ABC$, $AD = a$ cm and $CD = b$ cm, then the length (in cm) of AB is:

- (A) $\frac{a}{2} + 2b$ (B) $a + b$ (C) $\frac{2a}{3} + b$ (D) $a + \frac{2b}{3}$

23. If the diagonals of a quadrilateral bisect each other at right angles, then it is a

- (A) Trapezium (B) Parallelogram (C) Rectangle (D) Rhombus

24. The length of the diagonals of a rhombus are 16 cm and 12 cm. The side of the rhombus is

- (A) 10 cm (B) 12 cm (C) 9 m (D) 8 cm

25. If ABCD is a parallelogram with two adjacent angles A and B equal to each other, then the parallelogram is a

- (A) Rhombus (B) Trapezium (C) Rectangle (D) None of these

MULTIPLE OPTIONS CORRECT

1. Which of the following statements about a trapezium are true?

- (A) It has exactly one pair of parallel sides. (B) It has all sides of equal length.
(C) sum of its interior angles is always 360° (D) It can have perpendicular diagonals.

2. Consider a quadrilateral ABCD. Which of the following conditions guarantee that ABCD is a parallelogram?

- (A) Opposite angles are equal. (B) Diagonals bisect each other.
(C) Opposite sides are equal. (D) One pair of opposite sides is parallel.

3. For a quadrilateral to be a rhombus, which of the following statements must be true?

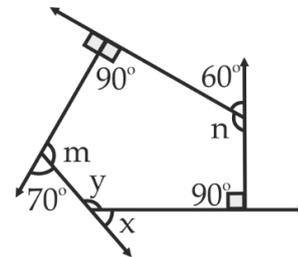
- (A) All sides are equal. (B) Diagonals are perpendicular.
(C) Opposite angles are equal. (D) One pair of opposite sides is parallel.

4. Which properties are true for a rectangle?
- (A) All angles are right angles. (B) Opposite sides are parallel and equal.
(C) Diagonals bisect each other. (D) All sides are of equal length.
5. Which of the following conditions make a quadrilateral a square?
- (A) All sides are equal. (B) Diagonals bisect each other at right angles.
(C) Opposite angles are equal. (D) All angles are right angles.
6. Consider a quadrilateral where all sides are equal but opposite angles are not equal. Which of the following could it be?
- (A) Parallelogram (B) Rhombus (C) Kite (D) Trapezoid
7. Select all the statements that are true for a trapezoid:
- (A) It has exactly two pairs of parallel sides. (B) The sum of interior angles is 360 degrees.
(C) Diagonals are equal in length. (D) Opposite angles are congruent.
8. Select all the properties that apply to a kite:
- (A) Two pairs of adjacent sides are equal. (B) Diagonals are perpendicular.
(C) One pair of opposite angles is equal. (D) Diagonals bisect each other.
9. Which of the following statements are true about a parallelogram?
- (A) The sum of its interior angles is 360 degrees. (B) Opposite sides are equal.
(C) Opposite angles are supplementary. (D) Diagonals are congruent.
10. Consider a quadrilateral where one pair of opposite sides is equal, and diagonals are perpendicular. Which of the following could it be?
- (A) Rhombus (B) Trapezoid (C) Parallelogram (D) Kite

SUBJECTIVE PROBLEMS

1. The sum of two angles of quadrilateral is 120. Larger angle is two times the smaller angle. Find the larger angle.

2. In a given figure, find the values of unknown



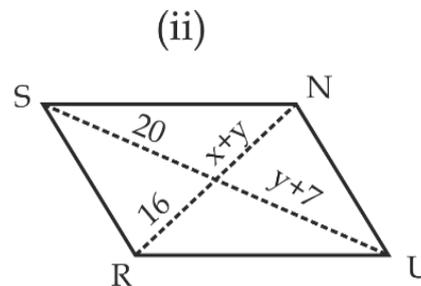
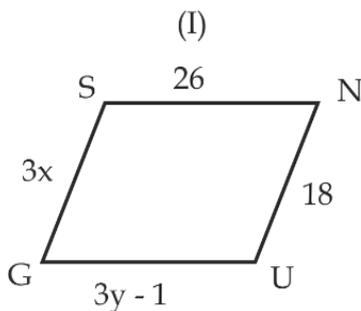
3. Can a quadrilateral ABCD be a parallelogram if

(i) $\angle D + \angle B = 180^\circ$?

(ii) $AB = DC = 8 \text{ cm}$, $AD = 4 \text{ cm}$ and $BC = 4.4 \text{ cm}$?

(iii) $\angle A = 70^\circ$ and $\angle C = 65^\circ$?

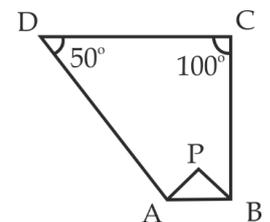
4. The following figures GUNS and RUNS are parallelograms. Find x and y. (Lengths are in cm)



5. Find the number of sides of a regular polygon, when each of its angles has a measure of
 (i) 160° (ii) 135° (iii) 175°

6. The measure of angles of a hexagon are x° , $(x - 5)^\circ$, $(x - 5)^\circ$, $(2x - 5)^\circ$, $(2x - 5)^\circ$, $(2x + 20)^\circ$.
 Find value of x.

7. In a quadrilateral ABCD, CO and DO are the bisectors of $\angle C$ and $\angle D$ respectively. Prove that $\angle COD = \frac{1}{2}(\angle A + \angle B)$.

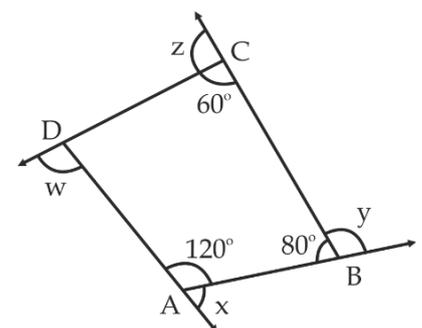


8. In Figure, the bisectors of $\angle A$ and $\angle B$ meet at a point P. If $\angle C = 100^\circ$ and $\angle D = 50^\circ$, find the measure of $\angle APB$. The measure of $\angle APB$ is 75°

9. A rectangular structure of house, has ratio of length and breadth 9:4 and length is 2 more than double of breadth, and perimeter is 54. Find Area of house.

10. In a convex hexagon, prove that the sum of all interior angle is equal to twice the sum of its exterior angles formed by producing the sides in the same order.

11. Find $x + y + z + w$ shown in the given figure:

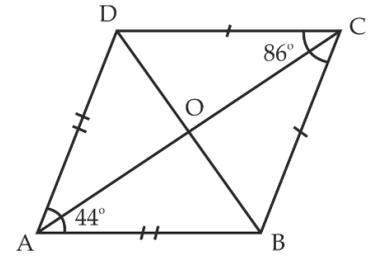


12. The perimeter of a parallelogram is 150 cm. One of its sides is greater than the other by 25 cm. Find the length of the sides of the parallelogram.

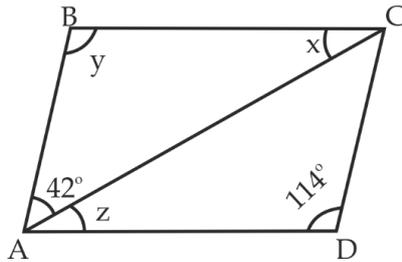
13. If an angle of a parallelogram is two third of its adjacent angle, find the angles of the parallelogram.

14. In figure, ABCD is a kite whose diagonals intersect at O. If $\angle DAB = 44^\circ$ and $\angle BCD = 86^\circ$:

Find: (i) $\angle ODA$, (ii) $\angle OBC$.



15. Find the values of x , y and z in a parallelogram ABCD shown in the figure given below.





THANKS!



Keep smiling!

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ANSWER KEY & SOLUTION

SINGLE OPTION CORRECT

- | | | | |
|-------|-------|-------|-------|
| 1. A | 2. C | 3. B | 4. B |
| 5. B | 6. D | 7. A | 8. B |
| 9. C | 10. B | 11. A | 12. B |
| 13. A | 14. A | 15. C | 16. A |
| 17. C | 18. A | 19. C | 20. D |
| 21. A | 22. B | 23. D | 24. A |
| 25. C | | | |

MULTI OPTION CORRECT

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|---------------|---------|------|---------|
| 1. A, D | 2. C, D | 3. A | 4. A, B |
| 5. A, B, C, D | | | |

SUBJECTIVE PROBLEMS

- | | | | |
|----------------------|-----------------------------|----|----|
| 1. | 2. | 3. | 4. |
| 5. 18, 8, 72 | 6. Value of x is 80° | 7. | 8. |
| 9. $A = 9 \times 18$ | 10. | | |