

7. To construct a kite, which of the following is necessary?
 (a) Two adjacent unequal sides and included diagonal
 (b) Two adjacent equal sides and included diagonal
 (c) Length of opposite sides
 (d) None of these
8. Which of the following statements is true about the construction of a quadrilateral where $AB = 3$ cm, $BC = 5$ cm, $AC = 9$ cm, $AD = 6$ cm. $CD = 2$ cm?
 (a) It is possible to draw the quadrilateral.
 (b) It is not possible to draw the quadrilateral, since $AD + DC < AC$.
 (c) It is possible to draw the quadrilateral, since $AD + DC < AC$
 (d) None of these
9. To construct a quadrilateral ABCD, which of the following parts is necessary?
 (a) Length of AB
 (b) Length of BC
 (c) Measure of $\angle A$, $\angle B$ and $\angle C$
 (d) All of these
10. Which of the given properties of a parallelogram is necessary to construct it?
 (a) Opposite sides of a parallelogram
 (b) Opposite angles of a parallelogram
 (c) Diagonals of a parallelogram
 (d) Both (a) and (b)

ACHIEVERS SECTION (HOTS)

11. Arrange the steps of construction while constructing a quadrilateral ABCD given $AB = 5.3$ cm, $AD = 2.9$ cm, $\angle A = 70^\circ$, $\angle B = 95^\circ$ and $\angle C = 85^\circ$.
Step 1: With A as centre and radius 2.9 cm, draw an arc to cut AX at D.
Step 2: At B, draw $\angle ZBA = 95^\circ$ so that ZB intersects YD at C,
Step 3: Draw $AB = 5.3$ cm.
Step 4: At D draw $\angle DY = 110^\circ$

Step 5: At A draw $\angle XAB = 70^\circ$.

- (a) 3, 4, 2, 1, 5 (b) 3, 5, 1, 4, 2
 (c) 3, 1, 5, 4, 2 (d) 3, 5, 4, 2, 1

12. Match the following.

Column - I	Column - II
(P) Construction of a quadrilateral can be possible if at least	(1) two unequal sides and included diagonal are given
(Q) Construction of quadrilateral must satisfy	(2) Five independent elements are given
(R) A kite can be drawn if its	(3) 4 sides, 4 angles and 2 diagonals
(S) A quadrilateral has	(4) triangle inequality and angle sum property of a triangle.

	P	Q	R	S
(a)	3	2	4	1
(b)	3	4	2	1
(c)	2	4	1	3
(d)	4	3	1	2

13. Arrange the steps (i) to (iv) in correct order, while constructing a parallelogram ABCD, given $\overline{AB} = 6$ cm, $\overline{AD} = 4$ cm, and diagonal $\overline{BD} = 3$ cm.
Step 1: Draw $\overline{AB} = 6$ cm
Step (i): Join \overline{AD} and \overline{BD} .
Step (ii): With A as centre, draw an arc of radius 4 cm.
Step (iii): With B and D as centres and with 4 cm and 6 cm as radii, respectively, draw arcs to cut each other at C.
Step (iv): With B as centre, draw an arc of radius 3 cm to cut the arc drawn in step (ii) at point D.
Step 6: Join \overline{CD} and \overline{BC} , ABCD is the required parallelogram.
 (a) (ii), (iv), (iii), (i)
 (b) (iii), (ii), (v), (iv)
 (c) (ii), (iv), (i), (iii)
 (d) None of these

14. To construct a convex quadrilateral, which of the following cases is INCORRECT?
- When the lengths of four sides and one diagonal are given,
 - When the lengths of three sides and the two diagonals are given.
 - When the lengths of four sides and one angle are given,
 - When the lengths of two sides and two included angles are given.

15. Which of the following steps is INCORRECT while constructing a rhombus ABCD, given that $AC = 8$ cm and $BD = 6$ cm?

Step 1: Draw $AC=8$ cm .

Step 2: Draw PQ, the perpendicular of AC. PQ intersects AC at point O.

Step 3: With O as centre and radius equal to 3 cm, draw an arc cutting OP at D.

Step 4: With O as centre and radius equal to 3 cm, draw another arc cutting OQ at B.

Step 5: Join AB, BC, CD and DA.

(a) Step 2 only

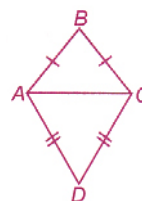
(b) Step 3 only

(c) Step 4 only

(d) Both Step 2 and Step 5

6. (d) : The correct step is : At C, $\angle ACD = 120^\circ$ draw such that CZ meets AX at D.

7. (a) : Two adjacent unequal sides and included diagonal means two unequal sides and diagonal from common vertex, i.e., sides AB, AD and diagonal AC are given.



8. (b) : Here, it is given that $AD + DC < AC$ which does not satisfy triangle inequality and hence quadrilateral cannot be drawn,

9. (d) : To construct a quadrilateral measure of at least five parts is necessary. In case of quadrilateral ABCD, if length of AB, BC and measure of $\angle A$, $\angle B$, $\angle C$ is required.

10. (d) :

11. (b) :

12. (c) :

13. (a) :

14. (d) :

15. (a) :

ANSWER KEY

1. C	2. B	3. A	4. C	5. B
6. D	7. A	8. B	9. D	10. D
11. B	12. C	13. A	14. D	15. A

HINTS & EXPLANATIONS

- (c): Step III is incorrect since with D as centre CD is drawn with radius = 4.4 cm.
- (b) :
- (a) :
- (c) :
- (b) : To construct a quadrilateral, knowledge of at least five elements is necessary.