

**Class: IX**  
**Subject: Math's**  
**Topic: Quadrilaterals**  
**No. of Questions: 20**  
**Duration: 20 Min**  
**Maximum Marks: 60**

1. Three angles of a quadrilateral are  $75^\circ, 75^\circ, 90^\circ$ , The fourth angle is
- A.  $90^\circ$
  - B.  $95^\circ$
  - C.  $105^\circ$
  - D.  $120^\circ$

Sol: D angle sum property  $a + b + c + d = 360$

$$15 + 90 + d = 360$$

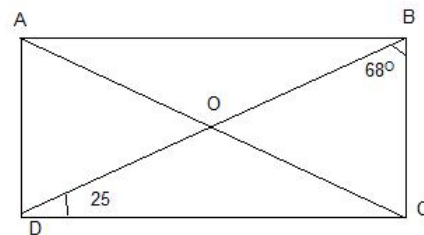
$$D = 360 - 240$$

$$D = 120$$

2. A diagonal of a rectangle is inclined to one side of the rectangle at  $25^\circ$ . The acute angle between the diagonals is
- A.  $55^\circ$
  - B.  $50^\circ$
  - C.  $40^\circ$
  - D.  $25^\circ$

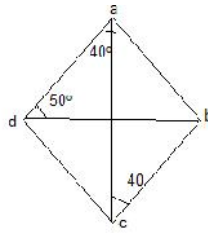
Sol: B

As this is cyclic quod  $\angle DAO = 65^\circ$  home  $\angle AOD = 50^\circ$



3. ABCD is a rhombus such that  $\angle ACB = 40^\circ$ . Then  $\angle ADB$  is
- A.  $40^\circ$
  - B.  $45^\circ$
  - C.  $50^\circ$
  - D.  $60^\circ$

Sol: C



$$\angle ADB = 50^\circ$$

4. 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

Sol: C property of quadrilateral

5. The quadrilateral formed by joining the mid-points of the sides of a quadrilateral PQRS, taken in order, is a rhombus, if

- A. PQRS is a rhombus
- B. PQRS is a parallelogram
- C. Diagonals of PQRS are perpendicular
- D. Diagonals of PQRS are equal

Sol: D Property of quadrilateral

6. If angles A, B, C and D of the quadrilateral ABCD, taken in order, are in the ratio 3:7: 6:4, then ABCD is a

- A. Rhombus
- B. Parallelogram
- C. Trapezium
- D. Kite

$$\text{Sol: } C \frac{A}{3} = \frac{B}{7} = \frac{C}{6} = \frac{D}{4} = K$$

$$\therefore A + B + C + D = 360$$

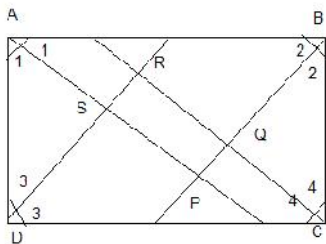
$$3K + 7K + 6K + 4K = 360$$

$$20K = 360$$

K = 18

7. If bisectors of  $\angle A$  and  $\angle B$  of a quadrilateral ABCD intersect each other at P, of  $\angle B$  and  $\angle C$  at Q, of  $\angle C$  and  $\angle D$  at R and  $\angle D$  and  $\angle A$  at S, then PQRS is a
- Rectangle
  - Rhombus
  - Parallelogram
  - Quadrilateral whose opposite angles are supplementary

Sol: D



$$\angle ASD = \angle S \quad \{\text{vertically opposite angles}\}$$

$$\angle BQC = \angle Q \quad \{\text{vertically opposite angles}\}$$

$$\angle S + \angle Q = \angle ASD + \angle BQC$$

$$= 180 - (1+3) + 180 - (2+4)$$

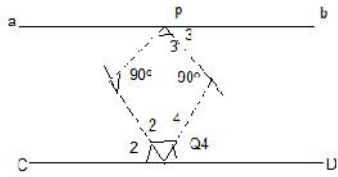
$$= 360 - (1+2+3+4)$$

$$\text{But } \{1 + 2 + 3 + 4 = \frac{360}{2}\} \text{ angles 2 cum properly}$$

$$\therefore \angle S + \angle Q = 180$$

8. If APB and CQD are two parallel lines, then the bisectors of the angles, APQ, BPQ, CQP and PQD form
- A square
  - A rhombus
  - A rectangle
  - Any other parallelogram

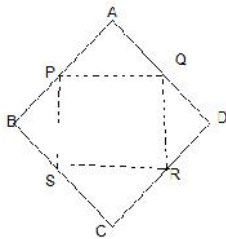
Sol: C



Opposite angles and of  $90^\circ$  a rectangle

9. The figure obtained by joining the mid-points of the sides of a rhombus, taken in order is
- A rhombus
  - A rectangle
  - A square
  - Any parallelogram

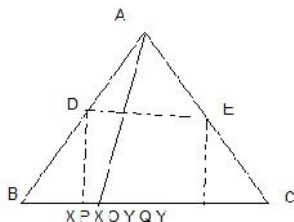
Sol: B



From geometry it is visibly that angles is  $90^\circ$  have rectangle

10. D and E are mid- points of the sides AB and AC of  $\Delta ABC$  and O is any point on side BC. O is joined to A. If Pand Q are the mid-points of OB and OC respectively, then DEQP is
- A square
  - A rectangle
  - A rhombus
  - A parallelogram

Sol: D

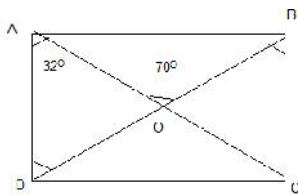


11. The figure formed by joining the mid-points of the sides of a quadrilateral ABCD, taken in order, is a rectangle only if,
- ABCD is a rectangle
  - ABCD is a parallelogram
  - Diagonals of ABCD are perpendicular.
  - Diagonals of ABCD are equal.

Sol: C It's a property of quadrilaterals.

12. The diagonals 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  $\angle DBC$  is equal to
- $24^\circ$
  - $86^\circ$
  - $38^\circ$
  - $32^\circ$

Sol: C



$$\begin{aligned} \angle AOD &= 180 - 70 & \therefore \angle ADO &= \angle DBC \\ &= 110^\circ & \text{are equal} \\ \therefore \angle ADQ &= 180 - (110 + 32) & \therefore \angle DBC &= 38^\circ \\ &= 180 - 142 \\ &= 38^\circ \end{aligned}$$

13. Which of the following is not true for a parallelogram?
- Opposite sides are equal
  - Opposite angles are equal
  - Opposite angles are bisected by the diagonals
  - Diagonals bisect each other.

Sol: C property of parallelogram

14. D and E are mid-points of the sides AB and AC respectively of  $\Delta ABC$ . DE is produced to F. To prove that CF is equal and parallel to DA, we need an additional information which is
- A.  $\angle DAE = \angle EFC$
  - B.  $AE = EF$
  - C.  $DE = EF$
  - D.  $\angle ADE = \angle ECF$ .

Sol: C Quiescent information

15. Angles of a quadrilateral are in the ratio 3: 6: 8: 13. The largest angle is
- A.  $178^\circ$
  - B.  $90^\circ$
  - C.  $156^\circ$
  - D.  $36^\circ$

Sol: C  $156^\circ$

$$3p + 6p + 8p + 13p = 30p = 360^\circ \Rightarrow p = 12^\circ \text{ Largest angle is } 13p = 13 \times 12^\circ = 156^\circ$$

16. Three angles of a quadrilateral are  $75^\circ$ ,  $90^\circ$  and  $85^\circ$ . The fourth angle is
- A.  $90^\circ$
  - B.  $85^\circ$
  - C.  $105^\circ$
  - D.  $110^\circ$

Sol: d  $110^\circ$

17. All the angles of a convex quadrilateral are congruent. However, not all its sides are congruent. What type of quadrilateral is it?
- A. Parallelogram
  - B. Square
  - C. Rectangle
  - D. Trapezium

Sol: d Rectangle

18. A quadrilateral which has 2 pairs of equal adjacent sides but unequal opposite sides is called
- A. Parallelogram
  - B. Rhombus
  - C. Kite
  - D. Square

Sol: c fact

19. A parallelogram each of whose angles measures  $90^\circ$  is\_\_\_\_\_.
- A. Rectangle
  - B. Rhombus
  - C. Kite
  - D. Trapezium

Sol: a fact

20. A parallelogram whose all sides are equal is called
- A. Square
  - B. Rhombus
  - C. Rectangle
  - D. Trapezium

Sol: b fact

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