WORKSHEET 8

CHAPTER 8 – QUADRILATERALS

1. In a parallelogram ABCD, X and Y are the mid-points of sides AB and CD respectively. Then the quadrilateral AXCY is a
   (*a*) square (*b*) rhombus (*c*) parallelogram (*d*) rectangle

2. A quadrilateral whose diagonals bisect at right angles is called a
   (*a*) parallelogram (*b*) rectangle (*c*) rhombus (*d*) trapezium

3. Which of the following is not a parallelogram?
   (*a*) Square (*b*) Rhombus (*c*) Rectangle (*d*) Trapezium

4. 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

5. 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 of $\angle D$ and $\angle A$ at S, then PQRS is
   (*a*) rectangle (*b*) rhombus
   (*c*) parallelogram (*d*) quadrilateral whose opposite angles are supplementary

6. Three angles of a quadrilateral are 75°, 90° and 75°. The fourth angle is
   (*a*) 90° (*b*) 95° (*c*) 105° (*d*) 120°

7. 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.

8. A diagonal of a rectangle is inclined to one side of the rectangle at 25°. The acute angle between the diagonals is
   (*a*) 55° (*b*) 50° (*c*) 40° (*d*) 25°

9. ABCD is a rhombus such that $\angle ACB = 40°$. Then $\angle ADB$ is
   (*a*) 40° (*b*) 45° (*c*) 50° (*d*) 60°

10. The quadrilateral formed by joining the mid-points of the sides of 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.

11. Diagonals AC and BD of a quadrilateral intersect each other at O such that OA : OC = 2 : 3. Is ABCD a parallelogram? Justify your answer.

12. One angle of a quadrilateral is 108° and the remaining three angles are equal. Find each of the three equal angles.

13. ABCD is a trapezium in which AB || DC and $\angle A = \angle B = 45°$. Find angles C and D of the trapezium.

14. ABCD is rhombus in which altitude from point D to side AB bisects AB. Find the angles of the rhombus.

15. The angle between two altitudes of a parallelogram through the vertex of an obtuse angle of the parallelogram is 60°. Find the angles of the parallelogram.

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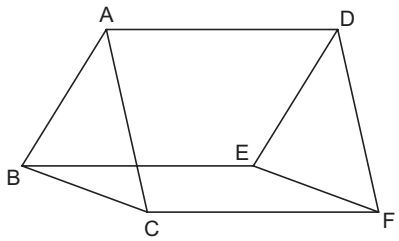
16. E is the mid-point of the side AD of the trapezium ABCD with AB || DC. A line through E drawn parallel to AB intersect BC at F. Show that F is the mid-point of BC.

17. Prove that the sum of all the angles of a quadrilateral is 360°.

18. In the given figure, AB || DE, AB = DE, AC || DF and AC = DF. Prove that BC || EF and BC = EF.



19. P and Q are the mid-points of the opposite sides AB and CD of a parallelogram ABCD. AQ intersects DP at S and BQ intersects CP at R. Show that PRQS is a parallelogram.

20. ABCD is quadrilateral in which AB || DC and AD = BC. Prove that ∠A = ∠B and ∠C = ∠D.

ANSWERS

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1. (*c*) parallelogram **2.** (*c*) rhombus **3.** (*d*) Trapezium **4.** (*c*) Trapezium **5.** (*c*) Parallelogram

6. (*b*) 95° **7.** (*a*) PQRS is a rectangle **8.** (*a*) 55° **9.** (*b*) 45° **10.** (*c*) diagonals are perpendicular

11. ABCD is not a parallelogram.
$\therefore$ diagonals of a ||gm bisect each other. Here OA $\neq$ OC.

12. 84° each **13.** $\angle C = 135°$, $\angle D = 135°$ **14.** 120°, 60, 120°, 60° **15.** 120°, 60°, 120°, 60°

19. P and Q are the mid-points of AB and CD. PQRS is also a parallelogram.
Show PBQD is APCQ are ||gms.
Then PS || QR and PR || QS
Hence, PRQS is a ||gm.