EXERCISE # 1

Q.1 The angle of a quadrilateral are respectively 100°, 98°, 92°. Find the fourth angle.

Q.2 Three angles of a quadrilateral are respectively equal to 110°, 50° and 40°. Find its fourth angles.

Q.3 In a quadrilateral ABCD, the angles A, B, C and D are in the ratio 1 : 2 : 4 : 5. Find the measure of each angles of the quadrilateral.

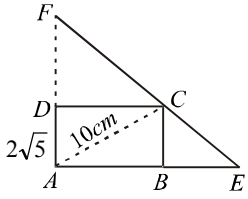
Q.4 In a quadrilateral ABCD, CO and DO are the bisectors of $\angle C$ and $\angle D$ respectively. Prove that $\angle COD = \frac{1}{2}(\angle A + \angle B)$.

Q.5 In fig. ABCD and PQRC are rectangles and Q is the mid-point of AC.

Prove that (i) DP = PC (ii) $PR = \frac{1}{2}AC$.

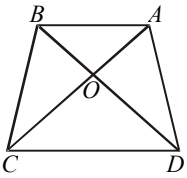
Q.6 BM and CN are perpendiculars to a line passing through the vertex A of a triangle ABC. If L is the mid-point of BC, prove that LM = LN.

Q.7 In the figure ABCD is a rectangle inscribed in a quadrant of a circle of radius 10 cm. If AD = $2\sqrt{5}$ cm, find the area of the rectangle.



Q.8 In the following figure, ABCD is a trapezium in which AB || DC. Prove that

arc (ΔAOD) = arc (ΔBOC)

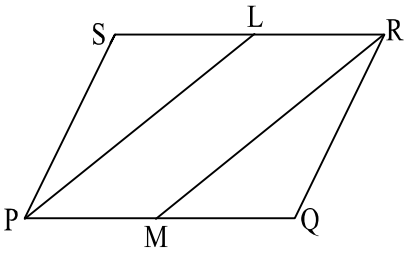


Q.9 Prove that area of rhombus = $\frac{1}{2}\times$ product of the diagonals.

Q.10 Show that each angle of a rectangle is a right angle.

Q.11 ABCD is a rhombus with $\angle ABC = 58^\circ$. Find $\angle ACD$.

Q.12 In the given figure, PQRS is a parallelogram in which PL and RM are bisectors of $\angle P$ and $\angle R$ respectively. Prove that PMRL is a parallelogram.



Q.13 The angle between two altitudes of a parallelogram through the vertex of an obtuse angle of the parallelogram is 60º. Find the angles of the parallelogram.

Q.14 PQ and RS are two equal and parallel line segments. Any point M not lying on PQ or RS is joined to Q and S and lines through P parallel to QM and through R parallel to SM meet at N. Prove that line segments MN and PQ are equal and parallel to each other.

Q.15 In ΔABC, P Q and R are mid-points of sides BC, CA and AB respectively. If AC = 21 cm, BC = 29 cm and AB = 30 cm, find the perimeter of the quadrilateral ARPQ.

➢ Fill in the Blanks

Q.16 The triangle formed by joining the mid-points of the sides of an isosceles triangle is.....

Q.17 The triangle formed by joining the mid-points of the sides of a right triangle is ..... .

Q.18 The figure formed by joining the mid-points of consecutive sides of a quadrilateral is.....

➢ True/False Type Questions

Q.19 In any quadrilateral, if a pair of opposite sides is equal, it is a parallelogram.

Q.20 If all the angles of a quadrilateral are equal, it is a parallelogram.

Q.21 If three sides of a quadrilateral are equal, it is a parallelogram.

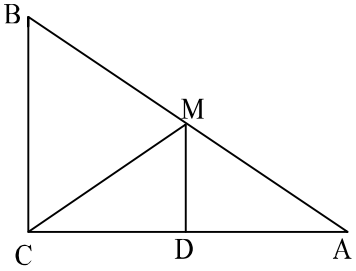
Q.22 If three angles of a quadrilateral are equal, it is a parallelogram.

Q.23 If all the sides of a quadrilateral are equal it is a parallelogram.

Q.24 A square is inscribed in an isosceles right triangle so that the square and the triangle have one angle common. Show that the vertex of the square opposite the vertex of the common angle bisects the hypotenuse.

Q.25 In a parallelogram ABCD, AB = 10 cm and AD = 6 cm. The bisector of $\angle A$ meets DC in E. AE and BC produced meet at F. Find the length of CF.

Q.26 ABC is a triangle right angled at C. A line through the mid-point M of hypotenuse AB and parallel to BC intersects AC at D. Show that



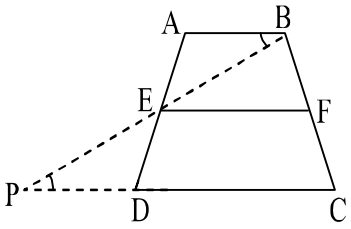
(i) D is the mid-point of AC

(ii) MD $\perp$ AC

(iii) CM = MA = $\frac{1}{2}$ AB

Q.27 E, F are respectively the mid-points of non-parallel sides of a trapezium ABCD. Prove that

(i) EF || AB and (ii) EF = $\frac{1}{2}$ (AB + CD)



Q.28 ABCD is || gm. P is a point on AD such that AP = $\frac{1}{3}$ AD and Q is a point on BC such that CQ = $\frac{1}{3}$ BC. Prove that the quadrilateral AQCP is a || gm.

ANSWER KEY

1. 70°	**2.** 160°	**3.** 30°, 60°, 120°,150°	**7.** 40 cm^2.	**14.** 51cm
16. Isosceles	**17.** Right triangle	**18.** Parallelogram	**19.** False	**20.** True
21. False	**22.** False	**23.** True	**25.** 4 cm.	

EXERCISE # 2

Q.1 In which quadrilateral is the lengths of diagonals equal ?

Q.2 If the diagonals of a quadrilateral bisect each other at right angles, then it is a :

Q.3 The length of the diagonals of a rhombus are 16 cm and 12 cm. The side of the rhombus is -

Q.4 The length of a side of a rhombus is 5 m and one of its diagonals is of length 8 m. Find the length of the other diagonal

Q.5 Find the angle where the bisectors of any two adjacent angles of a parallelogram intersect

Q.6 Give name of the figure formed by joining the mid points of the adjacent sides of a quadrilateral :

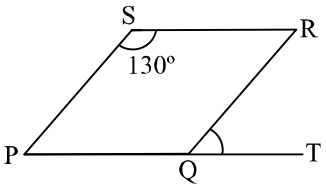
Q.7 Name the figure formed by joining the mid points of the adjacent sides of a rectangle

Q.8 Three angles of a quadrilateral are of magnitudes 80°, 95° and 120°. Find the magnitude of the fourth angle

Q.9 If ABCD is a rectangle, E, F are the mid points of BC and AD respectively and G is any point on EF, then prove that $\Delta GAB = \frac{1}{4}(ABCD)$

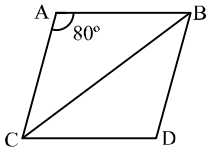
Q.10 Two consecutive angles of a parallelogram are in the ratio 1 : 3. Find the smaller angle

Q.11 In the given figure, PQRS is a parallelogram in which $\angle PSR = 130^\circ$, then find $\angle RQT$ -



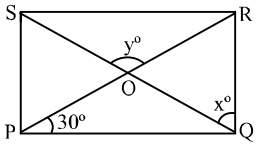
Q.12 If three angles of a quadrilateral are 100º, 75º and 105º, then find the measure of the fourth angle

Q.13 In the given figure, ABCD is a rhombus. If $\angle A = 80^\circ$, then find $\angle CDB$



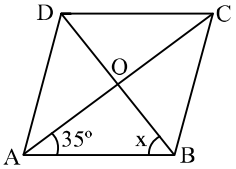
Q.14 The diagonals of a rhombus are 12 cm and 16 cm. Find the length of the side of the rhombus

Q.15 In the given figure, PQRS is a rectangle. If $\angle RPQ = 30^\circ$, then find the value of (x + y)

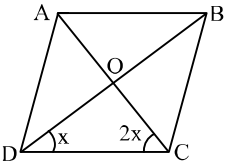


Q.16 If the length of the diagonal of a square is 8 cm. then find its area

Q.17 In the given figure, ABCD is a rhombus. If $\angle OAB = 35^\circ$, then find the value of x



Q.18 In the given figure, ABCD is a rhombus. Find the value of x



ANSWER KEY

1. Rectangle **2.** Rhombus **3.** 10 cm **4.** 6 m **5.** 90º
6. Parallelogram **7.** rhombus **8.** 65º **10.** 45º
11. 50º **12.** 80º **13.** 50º **14.** 10 cm **15.** 180º
16. 32 cm^2 **17.** 55º