

# SHRI RAM CENTENNIAL SCHOOL

## Worksheet

Subject: MATHEMATICS

Class: VIII

Number: [04/2627/8]

Date:

Roll No. –

Student's Name:

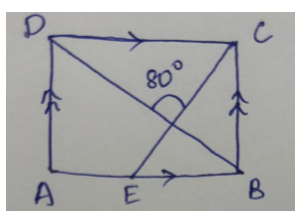
Section:

- 1 The diagonals of a \_\_\_\_\_ are equal and bisect each other at right angles.
- 2 The diagonals of a \_\_\_\_\_ bisect each other at right angles but are not equal.
- 3 Each diagonal bisects the angle through which it passes for a \_\_\_\_\_ and \_\_\_\_\_.
- 4 Diagonals form four pairs of congruent triangles for a \_\_\_\_\_ and a \_\_\_\_\_.
- 5 The sum of exterior angles of a quadrilateral is \_\_\_\_\_.

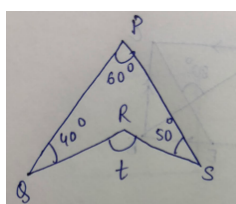
In each of the following questions, an Assertion (A) and a corresponding Reason (R) are given. Study both statements and choose the correct option.

- (a) Both A and R are true and R is the correct explanation of A.  
(b) Both A and R are true and R is not the correct explanation of A.  
(c) A is true but R is false.  
(d) A is false but R is true.

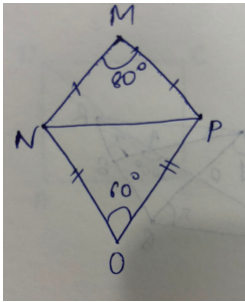
- 5 Assertion (A): The opposite angles of a parallelogram are equal.  
Reason (R): Each pair of adjacent angles of a parallelogram adds up to  $180^\circ$ .
- 6 Assertion (A): Every square is a rectangle.  
Reason (R): All the angles of a square are right angles and opposite sides are equal.
- 7 Assertion (A): Every kite is a rhombus.  
Reason (R): A kite has two pairs of adjacent sides equal, not all four sides.
- 8 The angles of a quadrilateral are  $x$ ,  $x + 9$ ,  $x + 6$  and  $x + 25$ . Find the angles of the quadrilateral.
- 9 The lengths of the diagonals of a rhombus are 12 cm and 16 cm respectively. Find the length of each side of the rhombus.
- 10 In the figure, ABCD is a square. Find the measure of  $\angle CEB$  and  $\angle CEA$ .



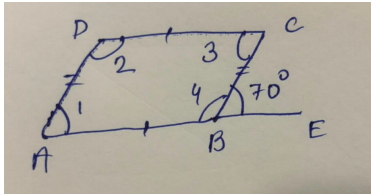
- 11 Find value of  $\angle t$  from the figure



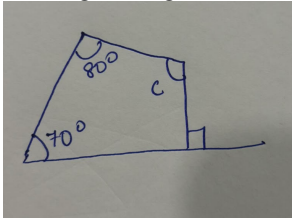
- 12 ABCD is a trapezium such that  $AB \parallel CD$ ,  $\angle A : \angle D$  is  $3 : 2$  and  $\angle B : \angle C = 5 : 4$ . Find the angles of the trapezium. Show the whole working using trapezium figure.
- 13 In the kite, find  $\angle MNO$  and  $\angle MPO$ .



- 14 Find marked angles in the figure. Also, mention the type of quadrilateral and explain the reason why?



- 15 In the given figure, find the measure of  $c$ .



- 16 A playground is in the form of a rectangle, PQRS. T is a point on SR such that PS = ST. Find  $\angle PTR$  and  $\angle SPT$ . Draw the diagram and show.
- 17 Construct a trapezium PQRS with  $PQ = 7$  cm,  $QR = 5$  cm and  $SR = 4$  cm and  $\angle Q = 75^\circ$  and  $PQ \parallel RS$ .
- 18 Draw a kite ABCD with  $AB = 3$  cm,  $AD = 5$  cm and  $\angle BAD = 120^\circ$ .
- 19 Draw a kite ABCD with the diagonal AC on either side of which the adjacent sides are equal to 6 cm,  $AB = 2.5$  cm and  $AD = 4.8$  cm.
- 20 Draw an isosceles trapezium PQRS with equal sides  $PS = QR = 4$  cm,  $\angle QPS = 60^\circ = \angle PQR$  and  $PQ = 8$  cm.
- 21 Construct a square ABCD with diagonal  $AC = 10$  cm.
- 22 Construct a rhombus ABCD with diagonals  $AC = 16$  cm and  $BD = 12$  cm.
- 23 Construct a rectangle ABCD with  $AB = 3$  cm and  $AC = 5$  cm.
- 24 Construct a rhombus with one side = 6 cm and one of its angles equal to  $135^\circ$ .
- 25 Mention all the properties of square. Prove that diagonals of a square are equal and bisect each other using congruency.

### CHALLENGING SECTION

- ABCD is a parallelogram.  $\angle A$  is an obtuse angle of the parallelogram. Altitudes AE and AF are dropped on side BC and side CD respectively from the vertex A.  $\angle EAF = 45^\circ$ . Find the angles of the parallelogram.
- In the figure, PQRS is a rhombus and  $\angle SRB = 68^\circ$ . Find  $x$ ,  $y$  and  $z$ .

