



Some special Parallelograms

A. Choose the Correct Answer:

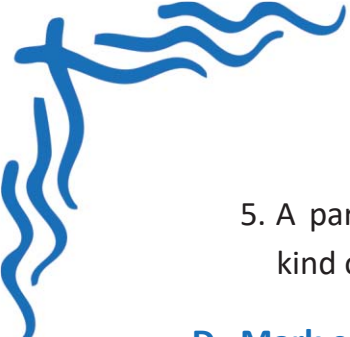
1. Which of the following quadrilaterals has all sides equal and all angles equal?
 - a) Rhombus
 - b) Square
 - c) Rectangle
 - d) Trapezium
2. Which special parallelogram has diagonals that are equal in length but do not intersect at 90° ?
 - a) Rhombus
 - b) Square
 - c) Rectangle
 - d) Kite
3. Which of the following properties is not true for a rhombus?
 - a) All sides are equal
 - b) All angles are 90°
 - c) Diagonals bisect each other at right angles
 - d) Opposite angles are equal

B. Write the Missing Terms to Complete the Sentences:

- a) A _____ has all sides equal and all angles 90° .
- b) The diagonals of a rhombus bisect each other at _____ angles.
- c) A rectangle has opposite sides _____ and all angles _____.
- d) A square is a special type of _____ and _____.
- e) The diagonals of a rectangle are _____ in length and bisect each other.

C. Figure out the answers to these questions:

1. Draw a square, a rectangle, and a rhombus. Label sides, angles, and diagonals, and write one special property for each.
2. Compare the properties of a rectangle and a rhombus. Write any three similarities and two differences.
3. In a square PQRS, one diagonal measures 10 cm. Find the length of the other diagonal and explain why.
4. Explain why every square is a rectangle, but every rectangle is not a square.

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5. A parallelogram has all sides equal and the diagonals intersect at 90° . What kind of special parallelogram is this? Justify.

D. Mark each sentence with a True (✓) or False (✗):

- | | |
|--|--------------------------|
| 1. All squares are rectangles, but all rectangles are not squares. | <input type="checkbox"/> |
| 2. A rhombus has all angles equal to 90° . | <input type="checkbox"/> |
| 3. The diagonals of a rectangle bisect each other but are not perpendicular. | <input type="checkbox"/> |
| 4. A square is both a rhombus and a rectangle. | <input type="checkbox"/> |
| 5. Diagonals of a rhombus are always equal. | <input type="checkbox"/> |

E. Challenge yourself with these questions:

1. Create a table showing the properties of parallelogram, rectangle, rhombus, and square with respect to sides, angles, and diagonals.
2. Look around your surroundings and find real-life objects that resemble squares, rectangles, and rhombuses. List them.
3. Draw a rhombus on graph paper and verify its diagonal properties using a ruler.
4. Design a quadrilateral with all sides equal and opposite angles equal but not 90° . What figure is it?
5. A square has diagonals measuring 12 cm. Find the length of one side using the Pythagoras theorem.