



## Verification of Properties of a Rectangle

### A. Choose the Correct Answer:

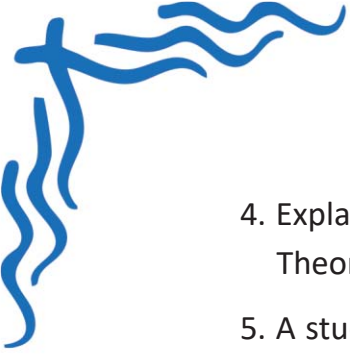
1. Which of the following is not a property of a rectangle?
  - a) Opposite sides are equal
  - b) Diagonals are equal
  - c) All angles are right angles
  - d) Diagonals bisect at  $90^\circ$
2. To verify that the diagonals of a rectangle are equal, which instrument is most appropriate?
  - a) Compass
  - b) Divider
  - c) Ruler
  - d) Set square
3. The diagonals of a rectangle:
  - a) Are equal and intersect at right angles
  - b) Are unequal and do not intersect
  - c) Are equal and bisect each other
  - d) Are equal but do not bisect each other

### B. Write the Missing Terms to Complete the Sentences:

1. In a rectangle, each angle measures \_\_\_\_\_ degrees.
2. The diagonals of a rectangle are equal and \_\_\_\_\_ each other.
3. A rectangle has \_\_\_\_\_ pairs of parallel sides.
4. To verify the angles of a rectangle, we can use a \_\_\_\_\_.
5. A rectangle is a special type of \_\_\_\_\_ with right angles.

### C. Figure out the answers to these questions:

1. Draw a rectangle on graph paper and verify that opposite sides are equal and all angles are  $90^\circ$ .
2. Use a ruler to measure the diagonals of a rectangle. Are they equal? Record your findings.
3. A rectangle has sides of length 8 cm and 6 cm. Draw the figure and measure both diagonals.



4. Explain why the diagonals of a rectangle are always equal using the Pythagoras Theorem.
5. A student draws a quadrilateral and claims it is a rectangle. What steps can be taken to verify if the figure is truly a rectangle?

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

1. All four sides of a rectangle are always equal.
2. Diagonals of a rectangle are equal in length.
3. Each angle in a rectangle is  $90^\circ$ .
4. Diagonals of a rectangle bisect each other at right angles.
5. A rectangle is a type of parallelogram.

☐  
☐  
☐  
☐  
☐

**E. Challenge yourself with these questions:**

1. Find a rectangular object (book, box, or paper) and verify its properties by measuring its sides and diagonals.
2. Design a practical activity using paper folding to check if diagonals of a rectangle are equal.
3. Explain why the opposite angles of a rectangle are always equal using geometrical reasoning.
4. Construct a rectangle using a compass and ruler, and label all sides, angles, and diagonals.
5. In a rectangle, one diagonal measures 10 cm and the length is 6 cm. Find the breadth using the Pythagoras Theorem.