# Verification of Properties of Parallelogram

#### A. Choose the Correct Answer:

- 1. Which instrument is used to measure angles while verifying properties of a parallelogram?
  - a) Divider
  - b) Compass
  - c) Protractor
  - d) Set square
- 2. To verify that opposite sides of a parallelogram are equal, you should measure:
  - a) Any one side
  - b) All four angles
  - c) Opposite sides using a scale
  - d) One angle and one diagonal
- 3. While verifying properties of a parallelogram, which property is checked by drawing both diagonals?
  - a) Opposite angles are equal
  - b) Adjacent sides are unequal
  - c) Diagonals bisect each other
  - d) All angles are 90°

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

- 1. A parallelogram has \_\_\_\_\_ pairs of opposite sides that are equal in length.
- 2. Diagonals of a parallelogram \_\_\_\_\_ each other.
- 3. To verify that opposite angles of a parallelogram are equal, we use a \_\_\_\_\_.
- 4. While drawing diagonals in a parallelogram, they intersect at their \_\_\_\_\_\_.
- 5. The sum of any two adjacent angles in a parallelogram is \_\_\_\_\_ degrees.

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

- 1. Draw a parallelogram on a graph paper and verify that opposite sides are equal in length using a ruler.
- 2. Use a protractor to measure and compare opposite angles of a parallelogram. Record your observations.

- 3. Draw both diagonals of a parallelogram and check whether they bisect each other. Explain your method.
- 4. In parallelogram PQRS, if  $\angle P = 65^\circ$ , verify the measure of the remaining angles.
- 5. Explain step-by-step how to verify that opposite sides of a parallelogram are parallel using a set square or graph paper.

## D. Mark each sentence with a True (✔) or False (★):

- 1. You can verify the property of diagonals bisecting each other without drawing them.
- 2. To confirm the angles of a parallelogram, measuring only one angle is enough.
- 3. Opposite sides of a parallelogram are always parallel and equal.
- 4. A square can be used to verify the 90° angles in a rectangle.
- 5. Diagonals of a parallelogram always intersect at right angles.

### E. Challenge yourself with these questions:

1. Write the steps to verify whether a given quadrilateral is a parallelogram using only a ruler and protractor.

- 2. Perform a paper folding activity to check if the diagonals of a parallelogram bisect each other.
- 3. Identify errors in a student's drawing where one pair of opposite sides is unequal. Can it still be a parallelogram?
- 4. Design an investigation using graph paper to check the parallel nature of opposite sides in a parallelogram.
- 5. Measure and compare the diagonals of a parallelogram and a rhombus. What do you observe?