Vertices, Sides, Angles and Diagonals of a Quadrilateral

A. Choose the Correct Answer:

1. How many vertices does every quadrilateral have?
a) 2
b) 3
c) 4
d) 5

2. The line segment joining opposite corners (non-adjacent vertices) of a quadrilateral is called a:
a) Side
b) Angle
c) Diagonal
d) Median

3. In any quadrilateral, the sum of all interior angles is:
a) 180°
b) 270°
c) 360°
d) 540°

B. Write the Missing Terms to Complete the Sentences:

1. A quadrilateral has _____ vertices and _____ sides.

2. A diagonal connects two _____ vertices of a quadrilateral.

3. The number of diagonals in any quadrilateral is _____.

4. The point where two sides of a quadrilateral meet is called a _____.

5. Adjacent sides of a quadrilateral share a common _____.

C. Figure out the answers to these questions:

1. Identify and name all the vertices, sides, angles, and diagonals of quadrilateral ABCD.

2. Draw a quadrilateral and mark its sides, angles, and diagonals. Label everything clearly.

3. If a quadrilateral has sides AB = 4 cm, BC = 5 cm, CD = 3 cm, and DA = 6 cm, find the perimeter.
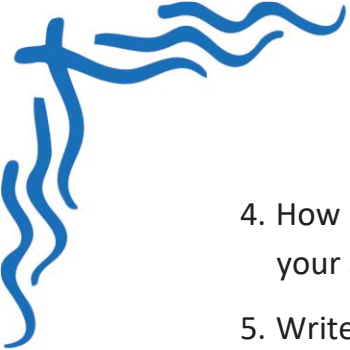
4. How many diagonals can be drawn from one vertex of a quadrilateral? Explain your answer with a diagram.

5. Write the names of the pairs of opposite and adjacent angles in quadrilateral PQRS.

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

1. A quadrilateral has 2 diagonals.

2. The diagonals of a quadrilateral are always equal.

3. All four sides of a quadrilateral can be of different lengths.

4. Two sides that meet at a common vertex are called opposite sides.

5. Each angle in a quadrilateral is formed by two adjacent vertices.

E. Challenge yourself with these questions:

1. Without drawing, list the names of the diagonals that can be formed in quadrilateral WXYZ.

2. Measure and compare the lengths of diagonals in a rectangle and a rhombus using a scale and explain the observation.

3. Create a quadrilateral using paper strips. Label all vertices, sides, and diagonals.

4. Write a short paragraph explaining the relationship between sides and angles in a quadrilateral.

5. If a quadrilateral has angles 90°, 85°, and 95°, find the fourth angle.