# **Convex and Concave Quadrilaterals**

## A. Choose the Correct Answer:

#### 1. A quadrilateral is convex if:

- a) All interior angles are more than 180°
- b) One or more interior angles are more than 180°
- c) All interior angles are less than 180°
- d) It has a reflex angle inside

#### 2. Which of the following is true for a concave quadrilateral?

- a) All diagonals lie inside the figure
- b) It looks like a regular square
- c) One diagonal lies outside the figure
- d) All sides are equal

#### 3. Which statement correctly differentiates convex and concave quadrilaterals?

- a) Convex quadrilaterals have more than four angles
- b) Concave quadrilaterals have all angles less than 90°
- c) A line segment joining any two points lies entirely inside a convex quadrilateral
- d) In convex quadrilaterals, diagonals lie outside the figure

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

- 1. A quadrilateral is called \_\_\_\_\_\_ if all its interior angles are less than 180°.
- 2. A quadrilateral in which at least one interior angle is greater than 180° is called
- 3. In a convex quadrilateral, all diagonals lie \_\_\_\_\_\_ the figure.
- 4. In a concave quadrilateral, at least one diagonal lies \_\_\_\_\_ the figure.
- 5. The sum of all interior angles of both convex and concave quadrilaterals is \_\_\_\_\_\_ degrees.

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

- 1. Draw a convex quadrilateral and a concave quadrilateral. Label the angles and diagonals clearly.
- 2. Explain with reasoning whether a star-shaped four-sided figure is convex or concave.
- 3. State one real-life example of each: a convex and a concave quadrilateral.

- 4. If one of the angles in a quadrilateral measures 220°, what type of quadrilateral is it? Justify your answer.
- 5. List two key differences between convex and concave quadrilaterals based on their properties.

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

- 1. A concave quadrilateral can have one interior angle greater than 180°.
- 2. All convex quadrilaterals have equal angles.
- 3. In a concave quadrilateral, all diagonals are inside the shape.
- 4. A rectangle is an example of a convex quadrilateral.
- 5. A quadrilateral cannot be both convex and concave at the same time.

# E. Challenge yourself with these questions:

- 1. Fold a paper to form a concave quadrilateral and identify the reflex angle.
- 2. Identify whether the given shapes are convex or concave quadrilaterals. Justify your classification.
- 3. Use a protractor and ruler to construct a quadrilateral with one angle greater than 180°.
- 4. Observe any four-sided shape around you. Identify if it is convex or concave and explain your observation.
- 5. Can a quadrilateral have exactly two angles greater than 180° and still be a concave quadrilateral? Explain.