Interior and Exterior of a Closed Curve

A. Choose the correct answer:

1. The space inside a closed curve is called its

a) Side b) Interior

c) Exterior d) Boundary

2. The region outside a closed figure is known as its

a) Interior b) Exterior

c) Curve d) Angle

3. Which of the following lies on the boundary of a closed curve?

a) Interior point b) Exterior point

c) Point on the curve d) Angle

4. A point inside a triangle lies in the

a) Exterior b) Interior

c) Line d) Vertex

5. Which part of a closed figure separates the interior from the exterior?

a) Edge b) Side

c) Curve d) Boundary

B. Write the Missing Terms to Complete the Sentences:

1. A point inside a closed curve lies in the _____.
2. A point outside the curve is in the _____.
3. The _____ divides the interior and exterior of a closed curve.
4. A circle is a _____ curve.
5. Every closed curve has an interior, boundary, and _____.

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

1. The interior of a closed curve lies outside its boundary _____
2. The boundary separates the interior and exterior _____
3. A square has no interior _____

4. Any point on the edge of a circle lies on the boundary _____
5. The space outside a closed figure is called its exterior _____

D. Figure out the answers to these questions:

1. Draw a closed figure and mark one point in the interior, one on the boundary, and one in the exterior.
2. Describe how you can identify whether a point lies in the interior of a closed figure.
3. Choose any closed shape and color its interior.
4. Look at a rectangular window. Mark an interior, exterior, and boundary point using a diagram.
5. Can a point lie both in the interior and on the boundary? Explain with an example.

E. Challenge yourself with these questions:

1. Draw a triangle and show one point in the interior and one in the exterior.
2. Identify objects in your surroundings where you can show interior, boundary, and exterior.
3. Mark three different points in the interior of a circle.
4. Can two points be on the same boundary? Give one example.
5. Is the center of a circle in its interior or on its boundary? Explain with a drawing.