

Symmetry & Transformations

Geometry · Grade 8

Score: _____ / 10

● Easy · 10 Questions

Solve each problem. Show your work in the space provided. Write your answer on the line.

1. A point $(2, 3)$ is reflected across the x -axis. Find its image.

Answer: _____

2. A point $(-4, 1)$ is reflected across the y -axis. Find its image.

Answer: _____

3. A point $(3, 4)$ is reflected across the y -axis. Find its image.

Answer: _____

4. A point $(5, -2)$ is reflected across the x -axis. Find its image.

Answer: _____

5. A point $(-1, -6)$ is reflected across the y -axis. Find its image.

Answer: _____

6. How many lines of symmetry does a square have?

Answer: _____

7. How many lines of symmetry does an equilateral triangle have?

Answer: _____

8. How many lines of symmetry does a circle have?

Answer: _____

9. A point $(0, 4)$ is reflected across the x -axis. Find its image.

Answer: _____

10. A point $(7, 0)$ is reflected across the y -axis. Find its image.

Answer: _____

Answer Key

Symmetry & Transformations — Easy

1. **(2, -3)**

Reflection across x -axis: $(x, y) \rightarrow (x, -y)$.

2. **(4, 1)**

Reflection across y -axis: $(x, y) \rightarrow (-x, y)$.

3. **(-3, 4)**

Reflection across y -axis negates the x -coordinate.

4. **(5, 2)**

Reflection across x -axis negates the y -coordinate.

5. **(1, -6)**

Reflection across y -axis negates the x -coordinate.

6. **4**

A square has 4 lines: 2 diagonals and 2 through midpoints of opposite sides.

7. **3**

One line from each vertex through the midpoint of the opposite side: 3 lines total.

8. **Infinite**

Every diameter is a line of symmetry, so a circle has infinitely many.

9. **(0, -4)**

Reflect across x -axis: negate y . $(0, 4) \rightarrow (0, -4)$.

10. **(-7, 0)**

Reflect across y -axis: negate x . $(7, 0) \rightarrow (-7, 0)$.