

**Important Questions for Class 7 Maths Chapter 12:** Chapter 12 "Symmetry" in Class 7 Mathematics introduces the concept of symmetry in geometric shapes and patterns. Key topics include line symmetry, where shapes have one or more lines dividing them into identical halves, and rotational symmetry, focusing on shapes that look the same after rotation around a central point.

Students learn to identify lines of symmetry in different figures and explore the role of symmetry in real-life objects and designs. Important questions include identifying symmetrical objects, drawing lines of symmetry, and determining the order of rotational symmetry for various figures. This chapter strengthens visualization and geometric understanding.

## Important Questions for Class 7 Maths Chapter 12 Overview

Chapter 12 "Symmetry" in Class 7 Maths is crucial for developing spatial reasoning and geometric visualization. It explores **line symmetry** and **rotational symmetry**, teaching students how to identify symmetrical figures and understand balanced designs. The chapter connects math with nature, art, and architecture, showing the importance of symmetry in creating harmonious patterns.

Key questions include identifying symmetrical figures, drawing lines of symmetry, and determining the order of rotational symmetry. These questions help students analyze shapes critically and recognize symmetry in real-life applications, fostering logical thinking and creativity while building a foundation for advanced geometry concepts in higher classes.

## Important Questions for Class 7 Maths Chapter 12 Symmetry

Below is the Important Questions for Class 7 Maths Chapter 12 Symmetry -

**Question 1. What is symmetry? Explain briefly**

**Answer 1:**

Symmetry is a concept in geometry where a shape can be symmetric or not. A shape is symmetric if an imaginary line can divide it into two equal halves that perfectly match when folded over. This imaginary dividing line is called the line of symmetry. If the halves do not match, the shape is asymmetric.

**Question 2. Enumerate the different types of symmetry?**

**Answer 2:** The different types of symmetry are:

- Rotational symmetry
- Reflection symmetry
- Translation symmetry
- Glide reflection symmetry

**Question 3. What do you understand by point symmetry?**

**Answer 3:** Point symmetry refers to the existence of a central point or a position on an object.

**Question 4. What is the other name given to the line of symmetry of an isosceles triangle?**

**Answer 4:** The other name is median or altitude for the line of symmetry of an isosceles triangle.

In an isosceles triangle, any two sides are equal.

**Question 5. Mention the other name given to the line of symmetry of a circle?**

**Answer 5:** The other name for the line of symmetry of a circle is diameter.

**Question 6. Enumerate three examples of shape which have no line of symmetry. Explain.**

**Answer 6:** If in any figure, there is no line about which the figure may be folded and there is no possibility of coinciding in different parts of the mirror, then this means that the shape has no line of symmetry.

Such example could be:

- A scalene triangle.

In a scalene triangle, no two sides are equal.

- A quadrilateral
- A parallelogram

**Question 7. State the number of lines of symmetry indicated for the geometrical figures named below:**

1. An equilateral triangle
2. An isosceles triangle
3. A scalene triangle
4. A square
5. A rectangle
6. A rhombus

7. A parallelogram
8. A quadrilateral
9. A regular hexagon
10. A circle
11. A regular pentagon

Answer 7:

When the figures drawn below are folded along the dotted lines, the two parts on either side of the dotted lines coincide. This is one of the important properties of geometrical figures and is called **symmetry**.

1. In an equilateral triangle, there are three sides, and all three sides are equal. There are three lines of symmetry in an equilateral triangle, as shown in the figure below:
1. In an isosceles triangle any two sides are equal as shown in the figure below:

An isosceles triangle has one line of symmetry.

1. In a scalene triangle, no two sides are equal as shown in the figure below. This type of triangle has no line of symmetry.
1. In a square, there are four lines of symmetry as shown in the figure drawn below.
1. In a rectangle, there are two lines of symmetry present, as shown in the figure given below.
1. Two lines of symmetry are present in a rhombus, as shown in the figure given below. In a parallelogram, if all the sides are equal then it is a rhombus.
1. A parallelogram has no line of symmetry.
2. A quadrilateral has no line of symmetry.
3. A regular hexagon shape has six lines of symmetry as shown in the figure given below.
1. A circle has infinite lines of symmetry.
2. A regular pentagon shape has five lines of symmetry as shown in the figure given below.

**Question 8. Give an example of the English letter or alphabet which has reflectional symmetry about a vertical mirror.**

**Answer 8:**

Reflective symmetry basically means symmetry related to mirror reflection. The English alphabets or letters which have reflective symmetry about a vertical mirror are A, H, I, M, O, U, V, W, X, Y.

**Question 9. Identify the lines of symmetry in the following figures.**

- 1.

Answer 9:

1. In the figure given above, it has three lines of symmetry.
2. In the figure given above, it has two lines of symmetry.
3. In the figure given above, it has three lines of symmetry.
4. In the figure given above, it has two lines of symmetry.
5. In the figure given above, it has four lines of symmetry.
6. In the figure given above, it has one line of symmetry.
7. In the figure given above, it has four lines of symmetry.
8. In the figure given above, it has six lines of symmetry.

**Question 10. In the figures given below, the mirror line or the line of symmetry is presented as the dotted line. Identify the figure and complete it.**

Answer 10: The line of symmetry has a concept which is similar to the reflection of a mirror. A mirror line aid in visualisation of the line of symmetry.

The figure obtained is a square.

The figure obtained is a triangle.

The figure obtained is a rhombus.

The figure obtained is a circle.

The figure obtained is a pentagon.

The figure obtained is an octagon.

**Question 11. The different figures are given below. Which of the following figures has rotational symmetry of order more than 1? Add a note on rotational symmetry.**

Answer 11: The best illustration of rotation is the clock's movement. It is either clockwise or anticlockwise. There is no change in the object's size or shape while it is rotating. Rather, the object revolves around a stationary point. The fixed point is the centre of rotation. The angle of rotation is equal to the angle of turning. A complete turn is represented as a 360-degree rotation.

The answer to the above figures are given below:

1. The given figure has a rotational symmetry of 4.
2. The given figure has a rotational symmetry of 3
3. The given figure has a rotational symmetry of 1.
4. The given figure has a rotational symmetry of 2.
5. The given figure has a rotational symmetry of 3.
6. The given figure has a rotational symmetry of 4.

**Question 12. The figures are given below. Give the order of rotational symmetry.**

Answer 12:

1. The above figure has rotational symmetry as 2.
2. The figure given above has rotational symmetry as 2.
3. The figure given above has rotational symmetry as 3.
4. The figure gives above has rotational symmetry as 4
5. The figure given above has rotational symmetry as 4.
6. The figure give above has rotational symmetry as 5.
7. The figure given above has rotational symmetry of 6.
8. The figure given above has rotational symmetry of 3.

## Benefits of Using Important Questions for Class 7 Maths Chapter 12 Symmetry

Using important questions for Class 7 Maths Chapter 12 "Symmetry" offers several benefits:

**Conceptual Clarity:** Helps students understand line and rotational symmetry effectively.

**Practice and Application:** Provides ample practice to identify symmetrical figures and draw symmetry lines.

**Exam Preparation:** Covers frequently asked exam questions, ensuring better performance.

**Visualization Skills:** Enhances spatial and geometric reasoning by analyzing patterns.

**Real-Life Relevance:** Connects symmetry concepts to practical applications in nature, art, and design.

**Confidence Building:** Boosts confidence by solving targeted questions aligned with the syllabus.

**Time Management:** Familiarity with important questions aids in efficient exam preparation.