CBSE Class 8 Maths Notes Chapter 9: Here are the CBSE Class 8 Maths Notes for Chapter 9 Mensuration. This chapter covers important concepts related to the measurement of geometric figures, including the calculation of area, perimeter, surface area, and volume of various shapes like squares, rectangles, triangles, and circles.

The notes provide a clear explanation of formulas and methods used to solve problems related to these measurements, making it easier for students to understand and apply these concepts in their exams.

CBSE Class 8 Maths Notes Chapter 9 Mensuration Overview

These notes on CBSE Class 8 Maths Chapter 9: Mensuration are prepared by experts at Physics Wallah. They cover the basic ideas of the chapter, including how to calculate the area, perimeter, and volume of different shapes. The notes explain everything in a simple way, step by step, so that students can easily understand and solve problems related to mensuration in their exams.

CBSE Class 8 Maths Notes Chapter 9 Mensuration PDF

The PDF link for CBSE Class 8 Maths Notes Chapter 9: Mensuration is available below. These notes provide a detailed overview of the chapter making it easier for students to grasp important concepts related to areas, perimeters and volumes of various shapes. Download the PDF to access the complete notes and enhance your understanding of Mensuration.

CBSE Class 8 Maths Notes Chapter 9 Mensuration PDF

CBSE Class 8 Maths Notes Chapter 9 Mensuration

Here are the notes for CBSE Class 8 Maths Chapter 9, Mensuration. This chapter covers key concepts related to the measurement of geometric shapes, including their area, volume, and surface area. You'll find detailed explanations of various solid shapes like cubes, cuboids, and cylinders, along with their formulas.

Mensuration

Mensuration is a branch of mathematics that focuses on measuring various aspects of geometrical shapes, such as their area, perimeter, length, and volume. It involves applying algebraic equations and geometric principles to calculate these measurements with high accuracy. There are two main types of geometric shapes that are studied in Mensuration:

2D Shapes: These include flat shapes like squares, rectangles, circles, and triangles, where calculations are primarily focused on their area and perimeter.

3D Shapes: These are solid shapes like cubes, spheres, cylinders, and cones, where the focus is on finding their volume and surface area.

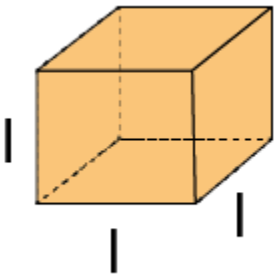
Volume of Solids

The volume of a solid refers to the amount of space that a three-dimensional object occupies. It is a measure of the capacity of the object and is expressed in cubic units.

For example, the volume of a cuboid, which is a three-dimensional shape with length , breadth, and height , can be calculated using the formula:

Volume of a cuboid =l×b×h

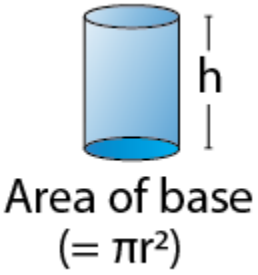
Volume of a Cube



Volume of a cube =l3

Where, l is the length of the each side of the cube.

Volume of a Cylinder



Volume of the cylinder =πr2h

Basics Revisited: Introduction to Mensuration

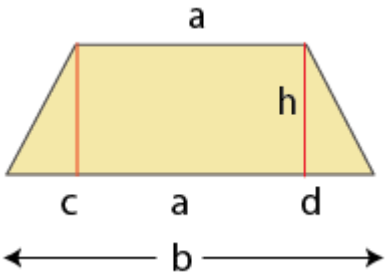
Mensuration is a branch of mathematics focused on measuring various aspects of geometric shapes. It covers the measurement of lengths, areas, and volumes.

- **Perimeter**: The total length around a shape, essentially the boundary line.
- **Area**: The total space enclosed within the shape.
- **Volume**: The total space occupied by a three-dimensional shape.

Trapezium

Area of Trapezium by Division into Shapes of Known Area

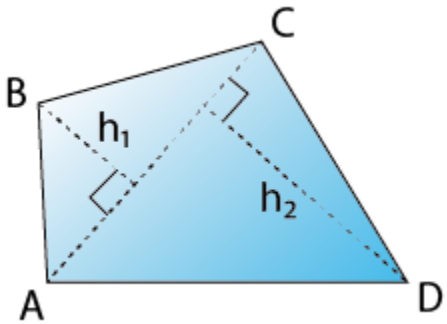
To find the area of a trapezium (also known as a trapezoid), we can divide it into simpler shapes: two triangles and one rectangle.



Here h is the height, a and b are 2 parallel sides.

Area of a General Quadrilateral

Consider a **quadrilateral ABCD**. Draw diagonal AC. From B and D draw perpendiculars h1,h2 to AC



Area of quadrilateral = Area of triangle ABC + Area of triangle ADC
=

12

×base×height+12×base×height
=(

12

×AC×h1)+(

12

×AC×h2) [Where, h1, h2 are the heights, AC is the base] =

12

×AC×(h1+h2)
=

12

×d×(h1+h2) [∵ AC is a diagonal]

∴Area of a Quadrilateral=

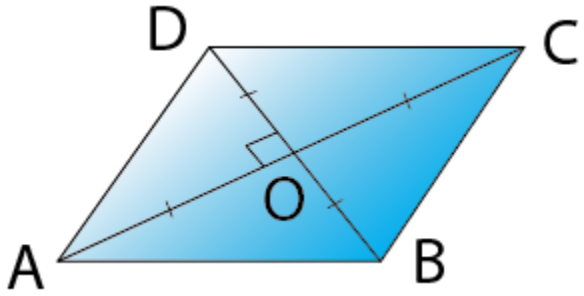
12

×d×(h1+h2)

where d is diagonal and h1,h2 are perpendicular drwan to a diagonal.

Area of Rhombus

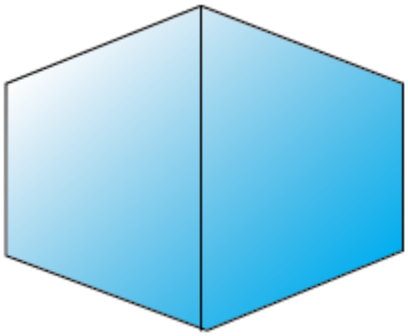
Area of rhombus = 12 ×d1×d2,



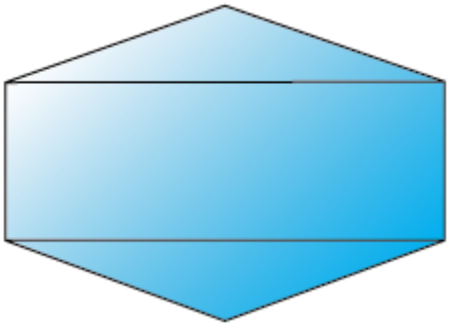
Area of Polygons

The area of any given **polygon** can be found by cutting the **polygon into shapes** whose area is known and adding the area of these shapes.

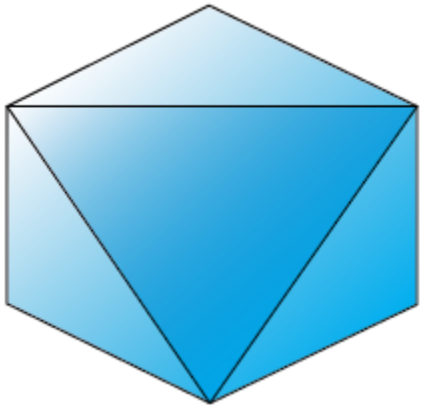
Some of the ways to find the area is shown below.



Area of this polygon = area of 2 trapeziums



Area of this polygon = Area of 2 triangles + Area of rectangle.



Area of this polygon = Area of 4 triangles.

Surface Area of Solids

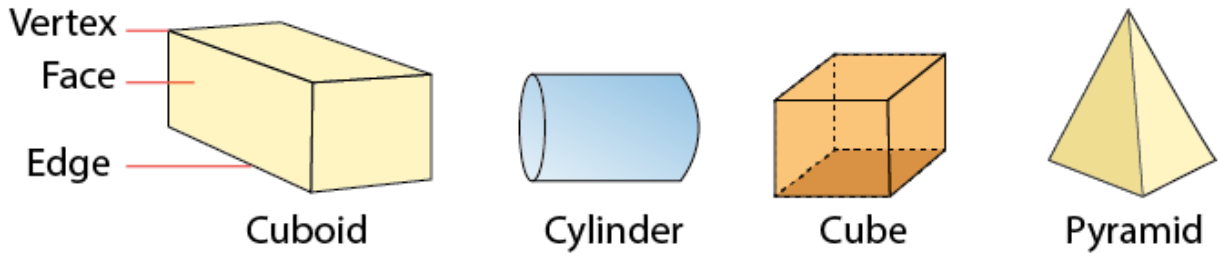
Solid Shapes

Solid shapes, or solid figures, are three-dimensional objects characterized by having length, breadth, and height. These dimensions allow us to calculate both the surface area and volume of the figures.

- **Surface Area:** This is the total area of all the outer surfaces of the solid. It is calculated by summing up the areas of each individual face or surface. For example, the surface area of a cuboid involves adding the areas of its six rectangular faces.
- **Volume:** This measures the total space occupied by the solid. It is calculated by multiplying the length, breadth, and height of the figure. For instance, the volume of a cuboid is found by multiplying its length, breadth, and height together.

Solids with a Pair or More of Identical Faces

Solids with a pair of identical faces are:

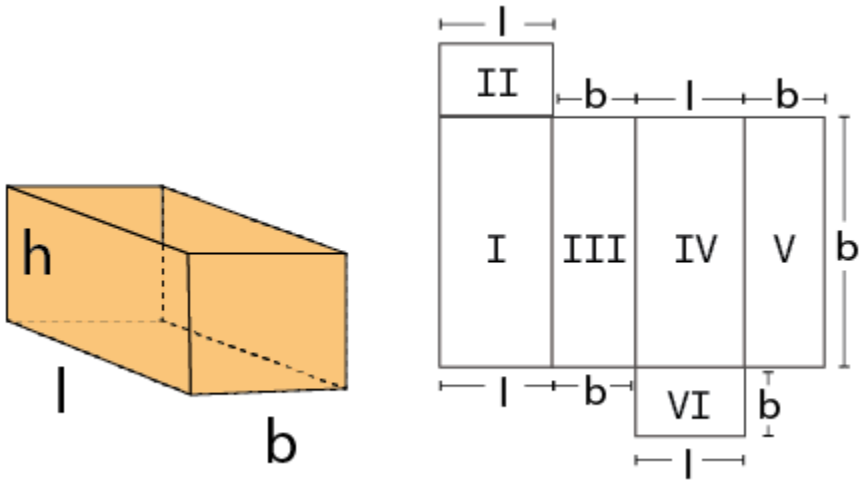


Surface Area of Solid Shapes

The surface area of an object is the total area covered by the outer surfaces of that object. It is essentially the sum of the areas of all the flat surfaces, also known as faces. For example, in a cuboid, the surface area is calculated by adding up the areas of all six rectangular faces.

This measurement is important for determining the amount of material needed to cover the object or for calculating the surface exposure in various applications.

Surface Area of a Cuboid

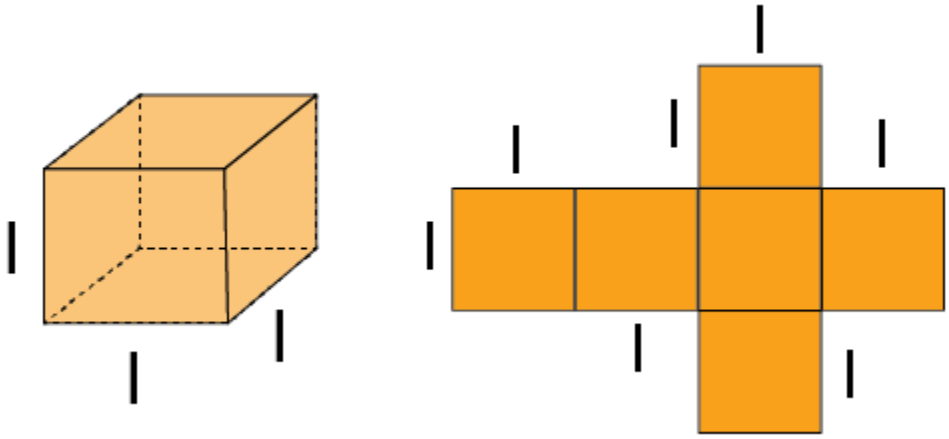


Total Surface area of cuboid =2(lb+bh+lh)

Lateral Surface area of cuboid =2h(l+b)

Where, l is the length, b is the breadth and h is the height.

Surface Area of a Cube

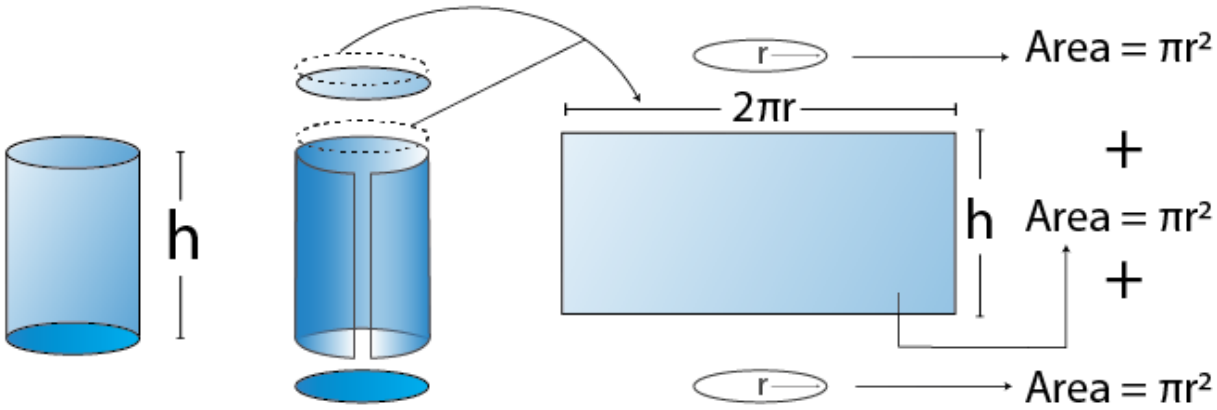


Total Surface area of a cube =6l2

Lateral Surface area of a cube =4l2

Where l is the length of each side of the cube.

Surface Area of a Cylinder



Curved surface area of cylinder (C.S.A) =2πrh

Total Surface area of cylinder(T.S.A) =2πr(r+h)

Where, r is the radius of the cylinder and h is the height of the cylinder.

Benefits of CBSE Class 8 Maths Notes Chapter 9 Mensuration

- **Comprehensive Understanding**: These notes provide a thorough explanation of geometric shapes and their properties, such as length, area, and volume. This helps students grasp the fundamental concepts of mensuration effectively.
- **Step-by-Step Solutions**: The notes include detailed, step-by-step solutions for various problems. This approach helps students understand the methods and techniques used to solve mensuration problems, enhancing their problem-solving skills.
- **Reinforcement of Key Concepts**: By summarizing essential formulas and concepts, the notes reinforce learning and provide a quick reference for revision before tests and exams.