CBSE Class 7 Maths Notes Chapter 11 Perimeter and Area: In CBSE Class 7 Maths, Chapter 11 tells about Perimeter and Area, which are important concepts in geometry. Perimeter means the total length around the edge of a shape, while area is the space inside the boundaries of a shape. Knowing these ideas well is important because they help us understand shapes better. In this chapter, students will learn how to find the perimeter and area of different shapes like squares, rectangles, triangles, and circles using specific formulas. They'll also see how these concepts are used in real life. By learning these things, students will become better at understanding shapes and solving problems related to them.

CBSE Class 7 Maths Notes Chapter 11 Perimeter and Area PDF

You can access the CBSE Class 7 Maths Notes for Chapter 11 on Perimeter and Area by clicking on the PDF link provided below. The notes provide explanations, examples, and exercises to help students learn and practice these concepts effectively.

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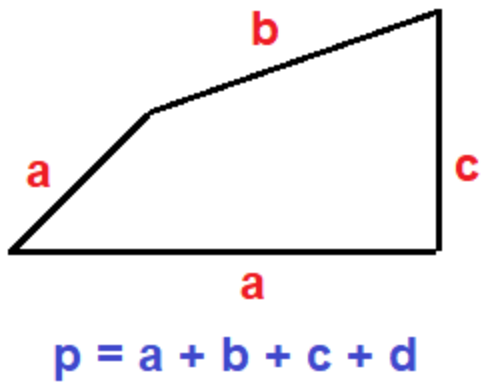
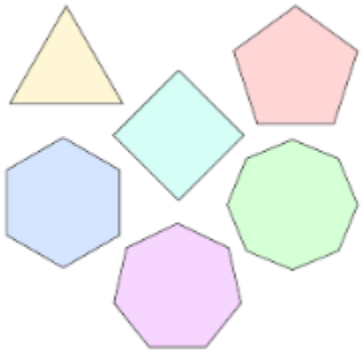
Perimeter

Perimeter refers to the total length or distance covered along the boundary of a closed shape, such as a square, rectangle, triangle, or any other polygon. It's like tracing the outline of a shape. The perimeter is calculated by adding up the lengths of all the sides of the shape. For example, the perimeter of a square with sides of length 5 meters would be 5 + 5 + 5 + 5 = 20 meters. Similarly, the perimeter of a rectangle with length 8 meters and width 6 meters would be 8 + 8 + 6 + 6 = 28 meters. In simple terms, the perimeter is the distance around the edge of a shape.



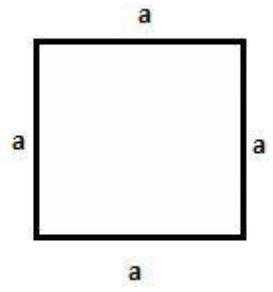
Area

Area refers to the amount of space enclosed within the boundary of a two-dimensional shape, such as a square, rectangle, circle, triangle, or any other polygon. It's like the surface area or space covered by the shape. The area is calculated differently depending on the shape. For example, the area of a square is found by multiplying the length of one side by itself (squared). So, if a square has sides of length 5 meters, its area would be 5 meters multiplied by 5 meters, which equals 25 square meters. Similarly, the area of a rectangle is found by multiplying its length by its width. For instance, if a rectangle has a length of 8 meters and a width of 6 meters, its area would be 8 meters multiplied by 6 meters, which equals 48 square meters. In simple terms, the area is the measure of the space inside a shape.



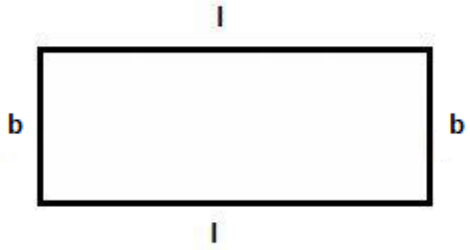
The perimeter of Square and Rectangle

- Perimeter of a square = a + a + a + a = 4a, where a is the length of each side.



Square with side length ‘a’ units

- Perimeter of a rectangle = l + l + b + b = 2(l + b), where l and b are length and breadth, respectively.

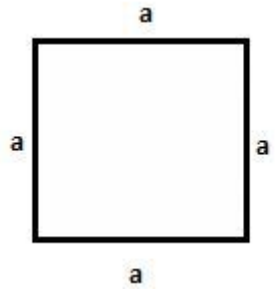


Rectangle with length ‘l’ units and breadth ‘b’ units

Area of Square & Rectangle

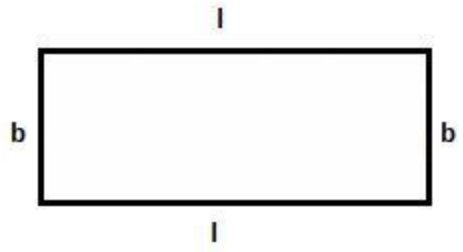
Area of square = 4a2

Here a is the length of each side



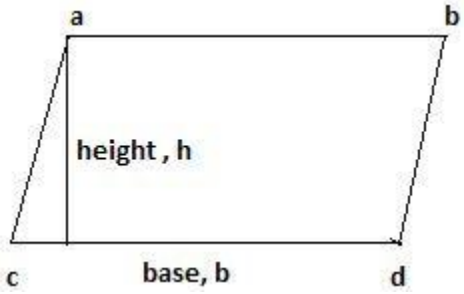
Square with the length of each side ‘a’ units

Area of rectangle = Length(l) × Breadth(b) = l×b



Rectangle with length ‘a’ units and breadth ‘b’ units

Area of a Parallelogram

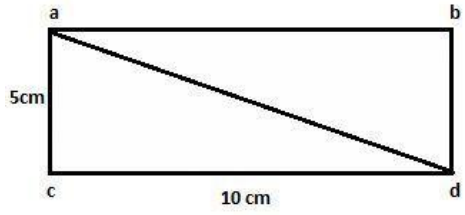


- Area of parallelogram ABCD = (base×height)

  Area of parallelogram ABCD = (b×h)

Triangle as Part of Rectangle

- The rectangle can be considered as a combination of two congruent triangles.
- Consider a rectangle ABCD, it is divided into 2 triangles ACD and ABD.

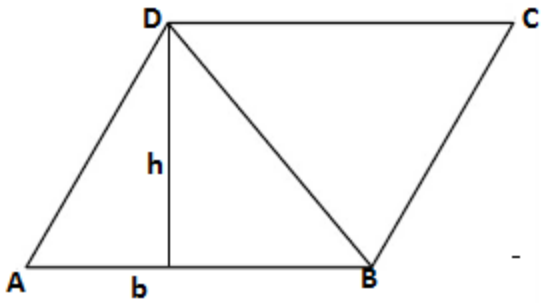


Triangles as parts of Rectangle

- Area of each triangle = 12 (Area of the rectangle).
  = 12(length×breadth)
  = 12(10cm×5cm)
  = 25cm2

Area of a Triangle

- Consider a parallelogram ABCD.
- Draw a diagonal BD to divide the parallelogram into two congruent triangles.



Area of Triangle = 1/2 (base×height)

- Area of triangle ABD = 1/2 (Area of parallelogram ABCD)

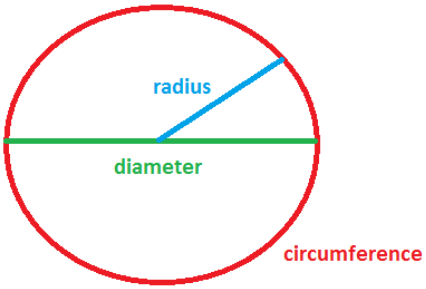
Area of triangle ABD = 1/2 (b×h)

Conversion of Units

- Kilometres, metres, centimetres, millimetres are units of length.
- 10 millimetres = 1 centimetre
- 100 centimetres = 1 metre
- 1000 metres = 1 kilometre

Terms Related to Circle

- A **circle** is a **simple closed curve** which is not a polygon.
- A circle is **a collection of points** which are **equidistant from a fixed point**.



- The fixed point in the middle is called the **centre**.
- The fixed distance is known as **radius**.
- The perimeter of a circle is also called as the **circumference** of the circle.

Circumference of a Circle

- The **circumference** of a circle (C) is the **total path** or **total distance** covered by the circle. It is also called a **perimeter** of the circle.

Circumference of a circle = 2×π×r,

where ***r*** is the radius of the circle.

Visualising Area of a Circle

Area of Circle

- **Area of a circle** is the **total region enclosed** by the circle.

Area of a circle = π×r2, where **r** is the radius of the circle.

Introduction and Value of Pi

- **Pi (π)** is the constant which is defined as the ratio of a circle's **circumference (2πr)** to its **diameter(2r).**

π= Circumference (2πr)/Diameter (2r)

- The value of pi is approximately equal to 3.14159 or 22/7.

Cost of Framing, Fencing

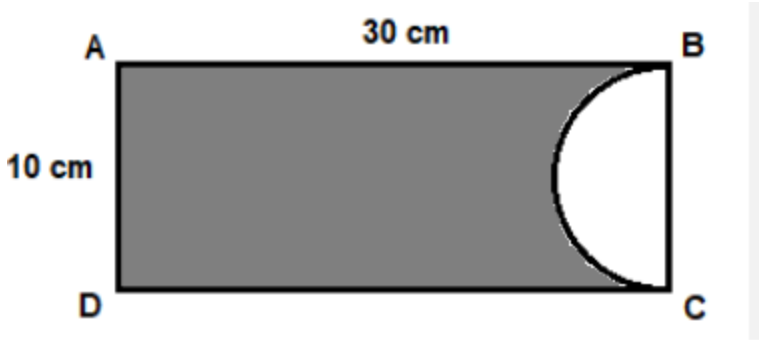
- Cost of framing or fencing a land is calculated by finding its perimeter.
- Example: A square-shaped land has length of its side 10m.
  Perimeter of the land = 4 × 10 = 40m
  Cost of fencing 1m = Rs 10
  Cost of fencing the land = 40 m × Rs 10 = Rs 400

Cost of Painting, Laminating

- Cost of painting a surface depends on the area of the surface.
- Example: A wall has dimensions 5m×4m.
  Area of the wall = 5m×4m=20m2
  Cost of painting 1m2 of area is Rs 20.
  Cost of painting the wall =20m2×Rs 20=Rs 400

Area of Mixed Shapes

- Find the area of the shaded portion using the given information.



Area of the shaded portion

Solution: Diameter of the semicircle = 10cm
Radius of semicircle = 5cm
Area of the shaded portion = Area of rectangle ABCD – Area of semicircle
Area of the shaded portion $= (l \times b) - (\pi r^2/2)$
$= 30 \times 10 - (\pi \times 5^2/2)$
$= 300 - (\pi \times 25/2)$
$= (600 - 25\pi)/2$
$= (600 - 78.5)/2$
= 260.7 cm2