

CLASS 9

MATHEMATICS

NCERT SOLUTIONS

NCERT Solutions for Class 9 Mathematics Chapter 5: I'm Up and Down, and Round and Round – Free PDF Download

Chapter 5 of Class 9 Maths Ganita Manjari Part 1 is I'm Up and Down, and Round and Round — the chapter on circles. It explores the geometric properties of circles, chords, arcs, and cyclic quadrilaterals. These Class 9 Mathematics Chapter 5 solutions are also useful as quick revision notes before exams.

Contents

Basic Definitions

Chord Properties

Angles Subtended by Arcs

Angle in a Semicircle

Circumcircle and Circumcentre

Cyclic Quadrilaterals

Class 9 Mathematics Chapter 5 – Notes and Extra Questions

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Basic Definitions

A **circle** is the set of all points equidistant from a fixed point (the centre). The **radius** is the distance from the centre to any point on the circle. A **chord** is a line segment joining two points on the circle; the **diameter** is the longest chord, passing through the centre.

Chord Properties

Equal chords of a circle subtend equal angles at the centre.

The perpendicular from the centre to a chord bisects the chord.

Conversely, the line joining the centre to the midpoint of a chord is perpendicular to the chord.

The perpendicular bisector of a chord always passes through the centre.

Angles Subtended by Arcs

The angle subtended by an arc at the **centre** is exactly twice the angle it subtends at any point on the remaining part of the circle (the circumference).

Angle in a Semicircle

The angle subtended by a **diameter** at any point on the circle is always 90° (a direct consequence of the angle-at-centre rule, since a diameter subtends 180° at the centre).

Circumcircle and Circumcentre

A **circumcircle** is a circle passing through all three vertices of a triangle. Its centre, the **circumcentre**, is found by drawing the perpendicular bisectors of any two sides of the triangle — the point where they intersect is equidistant from all three vertices.

Cyclic Quadrilaterals

A **cyclic quadrilateral** has all four vertices lying on a single circle. Its key property: opposite angles are always **supplementary** (sum to 180°). Also, the exterior angle at any vertex of a cyclic quadrilateral equals the interior opposite angle.

Class 9 Mathematics Chapter 5 – Notes and Extra Questions

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Quick revision: [Chapter 1](#) | [Chapter 2](#) | [Chapter 3](#) | [Chapter 4](#)

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