



Class 9 Maths – Chapter 5

Exercise 5.2 – Questions with Answer Key

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Exercise Set 5.2 has **2 questions**, both based on chords, radii, isosceles triangles and congruence.

1. Show that the triangle formed by a chord and the centre of the circle is isosceles.

Let **AB** be a chord of a circle with centre **C**.

Join **CA** and **CB**.

Since CA and CB are radii of the same circle:

$$\mathbf{CA = CB}$$

Therefore, ΔCAB has two equal sides.



Answer:

ΔCAB is an isosceles triangle.

Also, its base angles are equal:

$$\angle CAB = \angle CBA$$



Key idea: Radii of the same circle are equal.

2. Show that if two such isosceles triangles have equal base length, they are congruent.

Let two isosceles triangles be formed by two chords of the same circle and the centre.

Suppose their base lengths are equal.

Let the triangles be $\triangle CAB$ and $\triangle CDE$.

Given:

$$AB = DE$$

Since all four points lie on the same circle:

$$CA = CD$$

$$CB = CE$$

because all are radii of the same circle.

Therefore:

$$CA = CD$$

$$CB = CE$$

$$AB = DE$$

Hence, by **SSS congruence**:

$$\triangle CAB \cong \triangle CDE$$



Answer:

The two isosceles triangles are **congruent by SSS congruence**.



ANSWER KEY

1. Triangle formed by a chord and centre → **Isosceles triangle**
2. Equal base lengths + equal radii → **Triangles congruent by SSS**



Remember

Equal radii → Isosceles triangle → Equal base angles

Equal chords → Equal corresponding triangles.