# Guide to:
# Congruent triangles

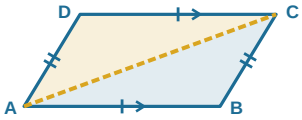
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**Explanation:**

Two triangles are congruent if they are identical in both shape and size. You must prove congruence by stating three matching pairs of sides/angles with geometric reasons, then concluding with one of the **four valid conditions**: **SSS** (3 sides), **SAS** (2 sides and the *included* angle), **ASA / AAS** (2 angles and a corresponding side), or **RHS** (Right-angle, Hypotenuse, and another Side).

Note that **AAA** proves similarity only (not congruence), and **ASS** is not sufficient unless the angle is 90° (RHS). Look out for shared/common sides, vertically opposite angles, alternate angles, and radii of a circle.

**Example 1:** ABCD is a parallelogram. Prove that ΔABC is congruent to ΔCDA.

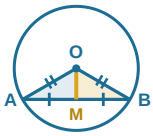



**Solution:**

- **AB = CD** (opposite sides of parallelogram)
- **BC = DA** (opposite sides of parallelogram)
- **AC is a common side** to both triangles

**Answer: ΔABC ≅ ΔCDA by SSS**

**Example 2:** AB is a chord of a circle with centre O, and M is the midpoint of AB. Prove ΔOAM ≅ ΔOBM.




**Solution:**

- **OA = OB** (both are radii of the circle)
- **AM = BM** (M is the midpoint of chord AB)
- **OM is a common side** to both triangles

**Answer: ΔOAM ≅ ΔOBM by SSS**

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