

Constructing Triangles

Chapter 14: Constructions and Tilings · Topic 1

Key Concept

Using the SSS method, three arcs are drawn from the endpoints of a known base side, using the other two given side lengths as radii, and their intersection point gives the triangle's third vertex. It's important to verify the triangle inequality (the sum of any two sides must be greater than the third) before attempting construction, since three lengths that don't satisfy this rule cannot form a valid triangle, regardless of construction method attempted.

Quick Revision Notes

- Triangles can be constructed using SSS (three sides), SAS (two sides + included angle), or ASA (two angles + included side).
- SSS construction: draw arcs from a base side's endpoints using the other two side lengths as radii.
- The triangle inequality (sum of two sides $>$ third side) must hold for a valid triangle to exist.
- Not every combination of three given lengths can form a valid triangle.

Practice Questions

- 1 Construct a triangle with sides 5cm, 6cm, and 7cm.
- 2 Check if sides of length 2cm, 3cm, and 6cm can form a valid triangle.
- 3 Construct a triangle using the SAS method with two sides of 4cm and 5cm and an included angle of 60° .