Triangle congruence tests

6 questions | 12 marks

Equivalent correct methods earn the corresponding marks.

1. Triangles have corresponding side lengths 4, 6, 8 cm and 4, 6, 8 cm. State the congruence test. [1 mark]

All three side pairs match.

Answer: SSS.

2. Two triangles each have angles 40° and 60°, and the side between these angles is 7 cm in both. State the test. [2 marks]

Two angles and their included side match.

Answer: ASA.

3. Two right triangles have hypotenuse 13 cm and a corresponding leg of 5 cm. State the test. [2 marks]

Right angle, hypotenuse and one matching shorter side are equal.

Answer: RHS.

4. Triangles each have angles 35°, 65° and 80°. Is congruence guaranteed? Explain. [2 marks]

AAA gives similarity; one triangle could be an enlargement of the other.

Answer: No. Equal angles do not fix the triangle’s size.

5. AB = DE, AC = DF and angles A and D are equal. State a test and identify why it applies. [3 marks]

AB and AC meet at A.

DE and DF meet at D.

Answer: SAS, because A and D are included between the given side pairs.

6. A student uses SSA as a general congruence test. Explain why this is unsafe. [2 marks]

The included-angle requirement of SAS has not been met.

Extra information or a valid test is needed.

Answer: A non-included angle with two sides may allow more than one triangle.