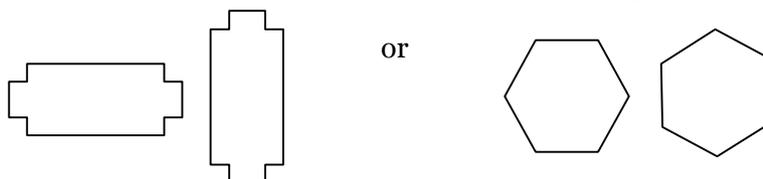


Congruent triangles

<http://topdrawer.aamt.edu.au/Geometric-reasoning/Big-ideas/Congruence/Congruent-triangles>

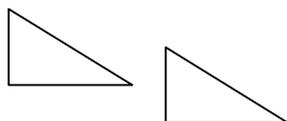
Two shapes are congruent if they have exactly the same size and shape.

For example:

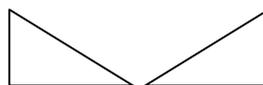


Congruent shapes are the result of combinations of three different transformations: translation, reflection or rotation.

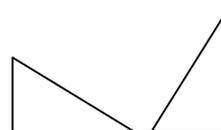
Translation (slide)



Reflection (flip)



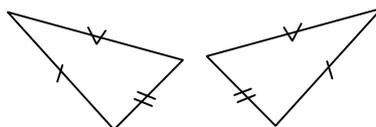
Rotation (spin)



Two triangles are congruent if they satisfy one of the four tests.

Test 1: SSS (side, side, side)

The three sides of one triangle are respectively equal to the three sides of the other.



Test 2: SAS (side, included angle, side)

Two sides and the *included* angle of one triangle are respectively equal to two sides and the *included* angle of the other triangle.



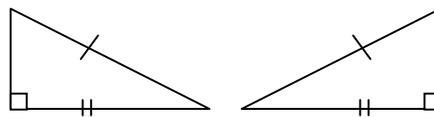
Test 3: AAS (angle, angle, corresponding side)

Two angles and one side of one triangle are respectively equal to two angles and the *matching* side of the other triangle.



Test 4: RHS (right angle, hypotenuse, side)

The hypotenuse and one side of one right-angled triangle are respectively equal to the hypotenuse and one side of the other right-angled triangle.



Once triangles have been proven congruent using three pairs of equal sides or angles, the remaining three matching pairs are automatically equal. This only applies in the case of congruent triangles.