

Definition: **congruent** from *The Penguin Dictionary of Science*

Two geometric figures are congruent if they have the same shape and size so that they 'look' identical.

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Summary Article: **congruent**

From *The Penguin Dictionary of Mathematics*

1.

Describing two or more geometric figures that differ only in location in space. The figures are congruent if one can be brought into coincidence with the other by a rigid motion in space (without changing any distances in the figure). Note that two plane figures can be congruent without being identical. For instance, two scalene triangles with identical sides and angles are not identical if one is drawn as a mirror image of the other. They are, however, congruent (on this definition) since one can be rotated through  $180^\circ$  about an axis in the plane (or 'picked up' off the plane and put down again the opposite way round). In the case of three-dimensional figures, this point is important since mirror images cannot be made coincident by a rigid motion in (three-dimensional) space. If two solid figures are identical, they are directly congruent. If each is identical to the mirror image of the other, they are oppositely congruent.

Two triangles are congruent if there is a correspondence between them satisfying one of the following conditions:

1. All three pairs of corresponding sides are equal (the SSS condition).
2. Two pairs of corresponding sides are equal, and the angles between them are equal (SAS).
3. Two pairs of corresponding angles and a pair of corresponding sides are equal (AAS or ASA).
4. The triangles are right-angled, and they have equal hypotenuses and a further pair of equal sides (RHS).

2.


See congruence modulo  $n$ .


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Congruent. (2008). In D. Nelson (Ed.), *The Penguin dictionary of mathematics* (4th ed.). London, UK: Penguin. Retrieved from [https://search.credoreference.com/content/topic/congruences\\_geometry](https://search.credoreference.com/content/topic/congruences_geometry) "congruent." In *The Penguin Dictionary of Mathematics*, edited by David Nelson. 4th ed. Penguin, 2008. [https://search.credoreference.com/content/topic/congruences\\_geometry](https://search.credoreference.com/content/topic/congruences_geometry)

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## **APA**

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## **Chicago**

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## **Harvard**

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## **MLA**

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