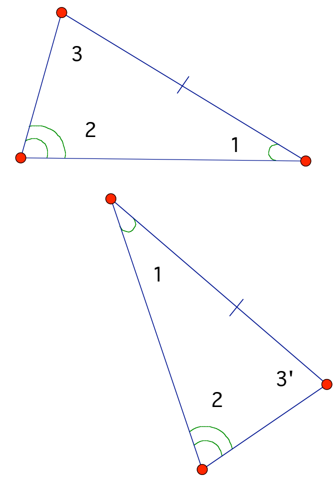
Theorem 22.(AAS) If two angles and a side of one triangle are equal to the corresponding parts of another triangle, then triangles are congruent.



Proof:

1. $\angle 1+\angle 2+\angle 3=180°$
   $\angle 1+\angle 2+\angle 3'=180°$
2. The third angle in the first △ is equal to the third angle in the second △.
3. Triangles are congruent.

Reason:

1. Theorem 20.
2. $\angle 3=180°-\angle 1-\angle 2=\angle 3'$
3. ASA for angles 1 and 3.

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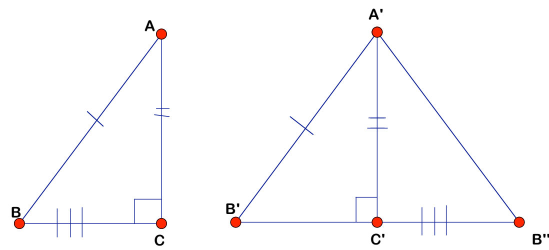
Theorem 23.(HL) If the hypotenuse and a leg of one right triangle are equal to the corresponding parts of another right triangle, then the triangles are congruent.



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Proof:

Statements:	Reasons:
1. Extend the line B'C' beyond the point C'. Let B'' be the point on the other side of C', such that |B'C'|=|B''C'|.	1. The ruler axiom (axiom 3.3), guarantees the existance of this point.
2. Draw A'B''.	2. Through any two points there is exactly one line.
3. $\angle A'C'B''=90°$.	3. $\angle A'C'B''$ is the supplement of a right angle.
4. |AC|=|A'C'|.	4. Given.
5. △ABC≅△A'B''C'	5. SAS.
6. |AB|=|A'B''|.	6. Corresponding sides of congruent triangles are equal.
7. |AB|=|A'B'|.	7. Given.
8. |A'B'|=|A'B''|.	8. 6 and 7.
9. $\angle B'=\angle B''$.	9. If a △ has two equal sides, then the opposite to these sides angles are equal. Pons asinorum.
10. $\angle B=\angle B''$.	10. Corresponding angles of congruent △s are equal.
11. $\angle B=\angle B'$.	11. From 9 and 10.
12. △ABC≅△A'B'C'.	12. AAS.