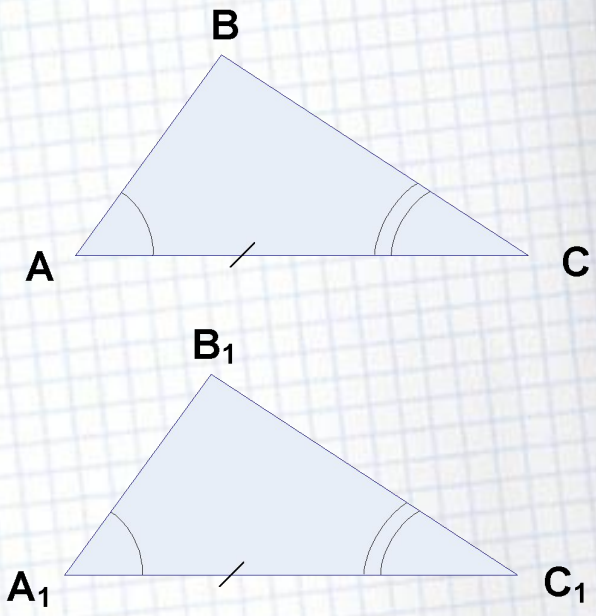
The second sign of equality of triangles

Theorem on equality of triangles

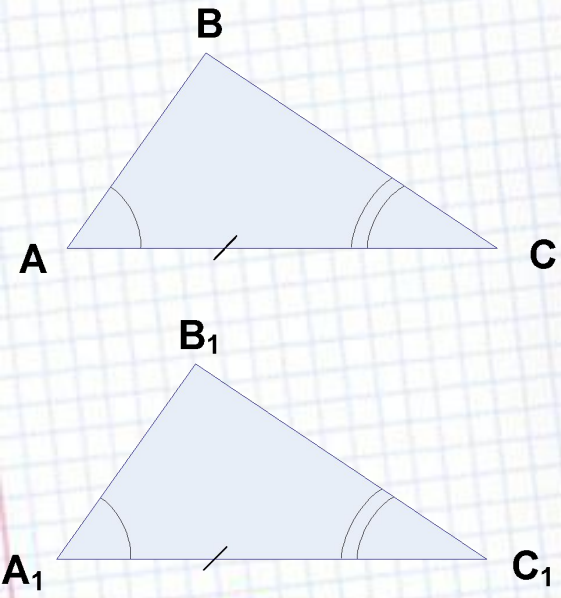
- If the side and two adjoining angles of the same triangle are accordingly equal to the side and two adjoining angles of the other triangle, then these triangles are equal.



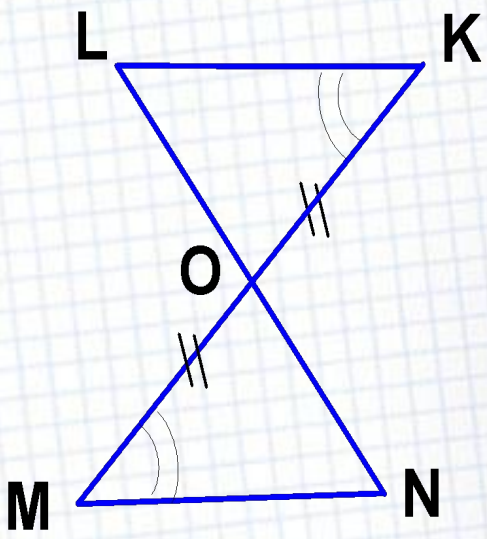
Given:

- The triangle ABC and A1B1C1
- AB is equal to A1B1
- The angle A is equal to the angle A1
- The angle B is equal to the angle B1
- **To be to prove that:**
- The triangle ABC is equal to the triangle A1B1C1

- **Proof**
- Let's put the triangle ABC on the triangle $A_1B_1C_1$ so that the apex A would be superposed with the apex A_1, and the side AB would be superposed with equal side A_1B_1 and A_1C_1 and the apex C and C_1 would be on the same side from the straight line A_1B_1.
- As far as, the angle A is equal to the angle A_1 and the angle B is equal to the angle B_1, then the side AC will be put on the ray A_1C_1 and the side BC on the ray B_1C_1. So the apex C, which is the common point of the sides AC and AB, will be on both rays A_1C_1 and B_1C_1. Therefore, the apex C will be superposed with the common point of these rays, that is, the apex C_1. That means the sides AC and A_1C_1, BC and B_1C_1 will be superposed.
- As the triangle ABC and $A_1B_1C_1$ are completely superposed, they are equal.
- **The theorem has been proved.**

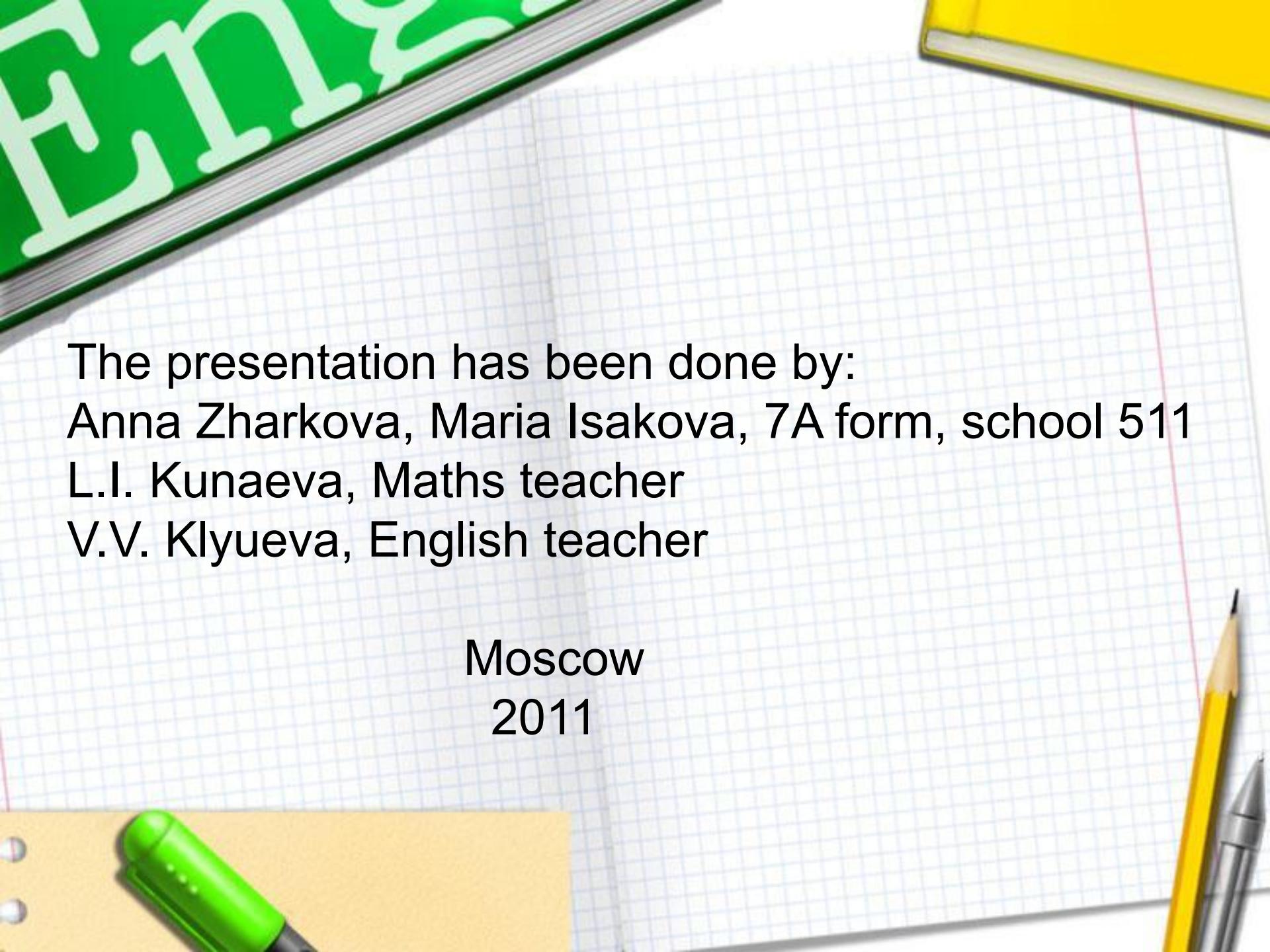


To proof the equality of the triangles LOC and NOM



- Proof:
- 1.The angle K is equal to the angle M (according to the condition)
- 2.MO is equal to OK (according to the condition)
- 3.The angle KOL is equal to the angle MON (as vertical angles)

Therefore the triangle LOK is equal to the triangle NOM (according to the second sign of equality of triangles)



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Библиография

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