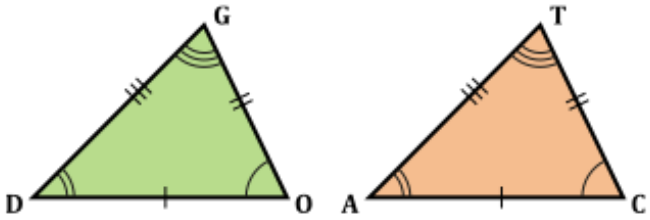
#1: Gr07_2 Geo--Chapter 2. Review - Congruent Triangles

#2: Review - Congruent Triangles. Definitions and Theorems

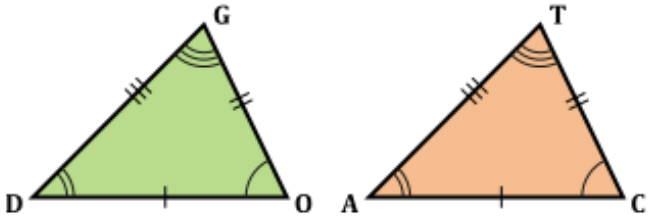
Definition | **Definition:** Two triangles are congruent if the sides and angles of one triangle are respectively congruent to the sides and angles of the other – the pairs of congruent angles and sides are called corresponding angles and sides (parts).

Corresponding ∠s ≅
∠D ≅ ∠A
∠O ≅ ∠C
∠G ≅ ∠T

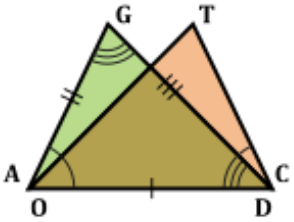


Corresponding sides ≅
$\overline{DO} \cong \overline{AC}$
$\overline{OG} \cong \overline{CT}$
$\overline{DG} \cong \overline{AT}$

According to the definition, matching the corresponding parts (sides and angles) is essential. Otherwise, the congruency statement is false.

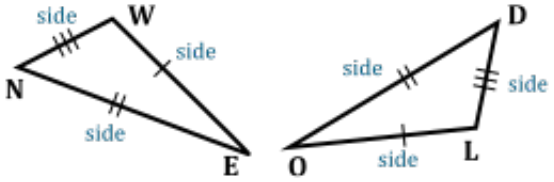


△DOG ≅ △ACT

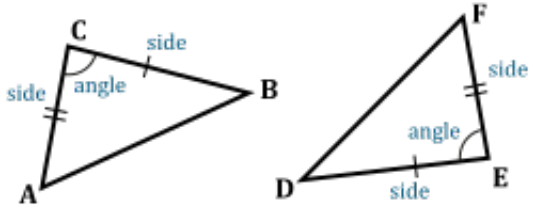


△DOG ≇ △CAT

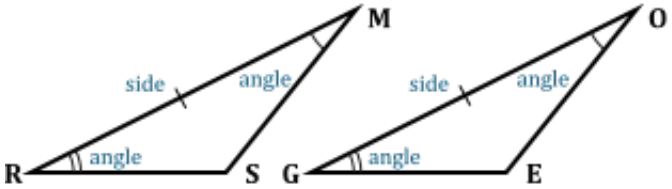
Triangle Congruency Rules



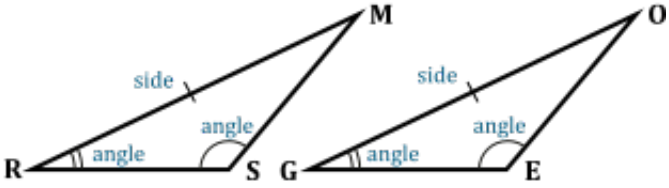
△NEW ≅ △DOL by SSS



△ABC ≅ △FDE by SAS



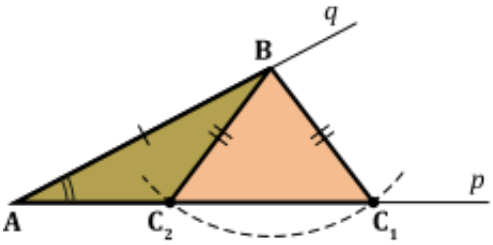
△RSM ≅ △GEO by ASA

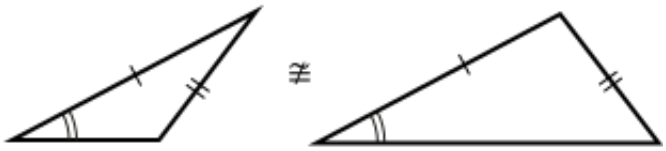


△RSM ≅ △GEO by AAS or SAA

Recall:

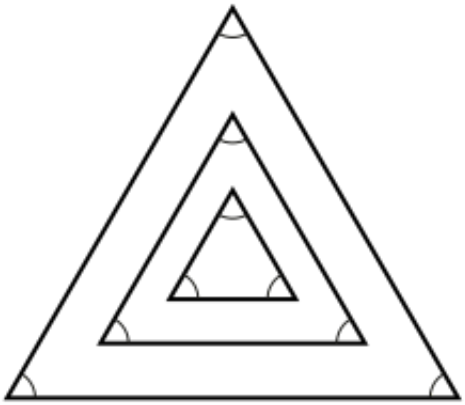
In case of SSA, the congruency CanNot Be Determined (CNBD).

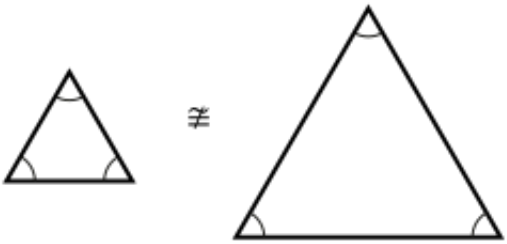


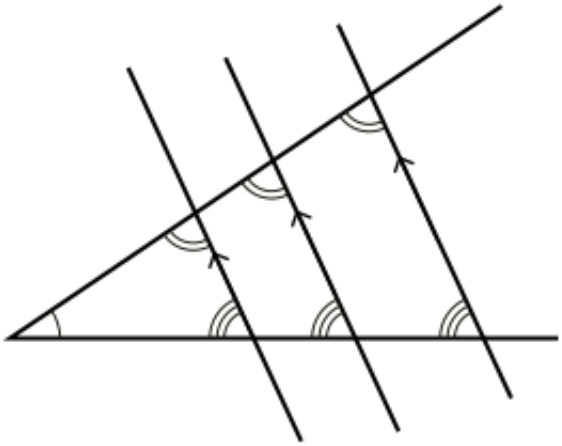


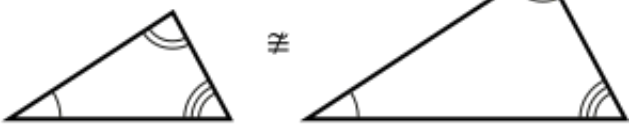
Recall:

In case of AAA, congruency CanNot Be Determined (CNBD).









Once we prove that two triangles are congruent then all of their corresponding parts are congruent.

Corresponding parts of congruent triangles are congruent (CPCTC).

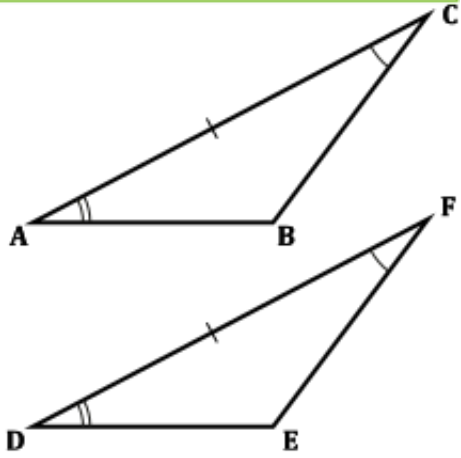
Example:

Given: AC = DF, m∠A = m∠D, m∠C = m∠F

Prove: Remaining corresponding parts are ≅

Proof:

1. AC = DF	1. Given
2. m∠A = m∠D	2. Given
3. m∠C = m∠F	3. Given
4. △ABC ≅ △DEF	4. ASA
5. AB = DE	5. CPCTC
6. BC = EF	6. CPCTC
7. m∠B = m∠E	7. CPCTC



#3: EXERCISES

#4: Part A

#5: Part B