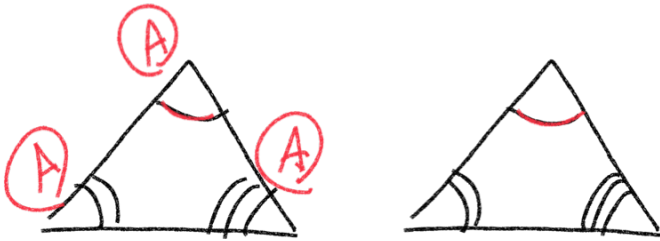


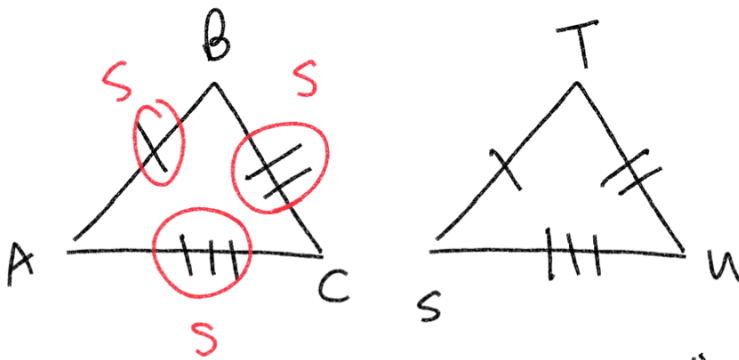
Two Requirements for Triangle Congruency

- 1.) You must have one representative from each angle-side pair. (Letter)
- 2.) Must have at least one side congruency.



angle-angle-angle

AAA not a congruency  
similarity

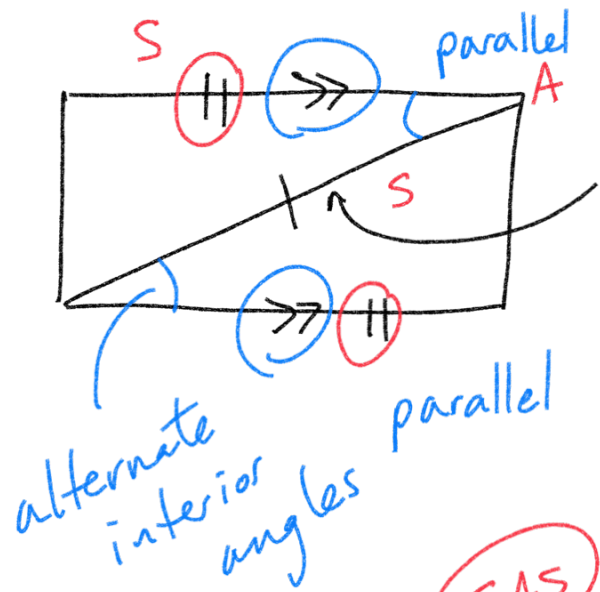


side-side-side  
SSS  
congruency

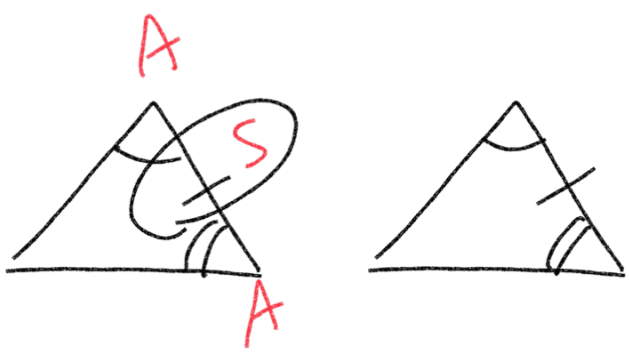
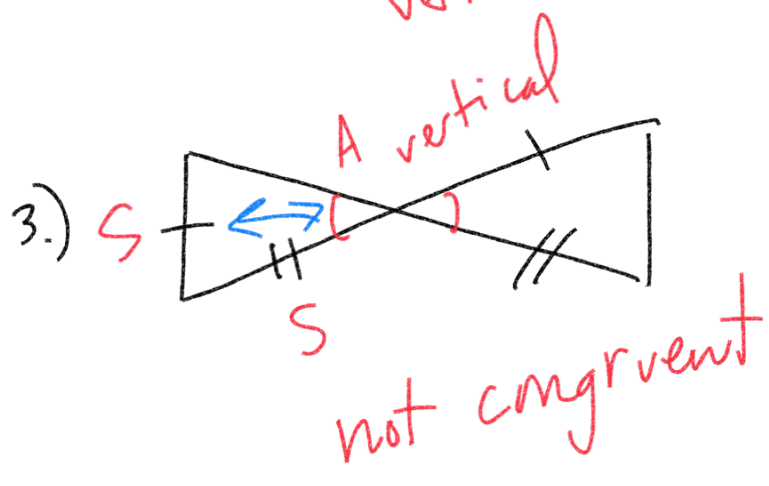
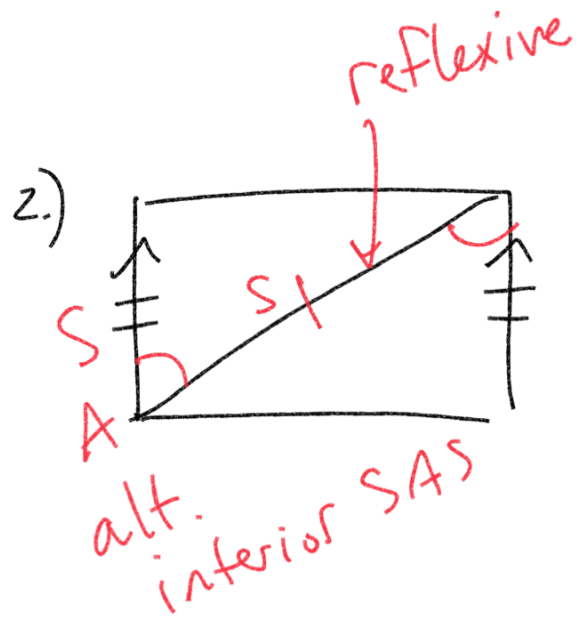
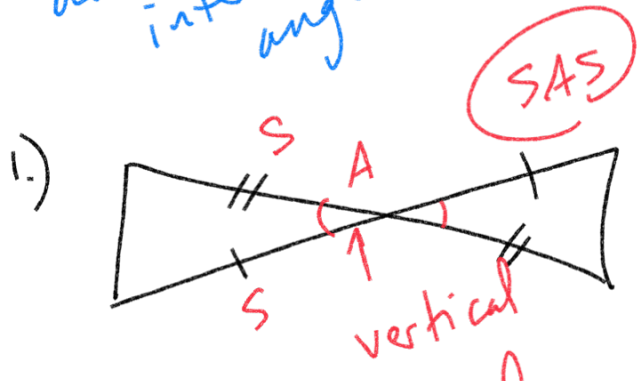
$$\triangle ABC \cong \triangle STU$$



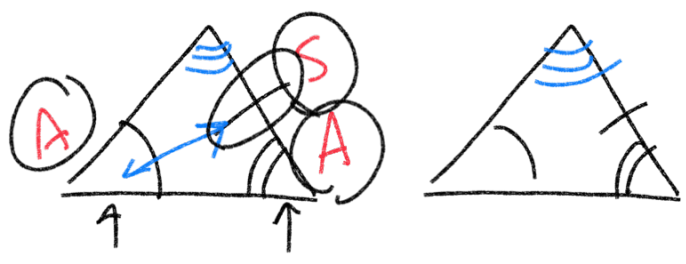
side-angle-side  
SAS  
congruency



reflexive property **SAS**

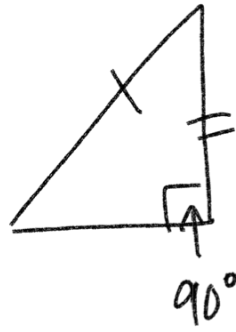
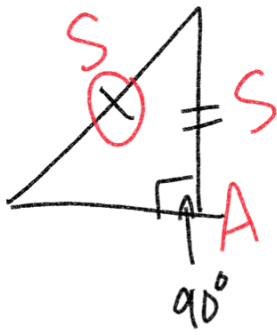


Angle-side-Angle  
**ASA**



congruent  
**AAS**

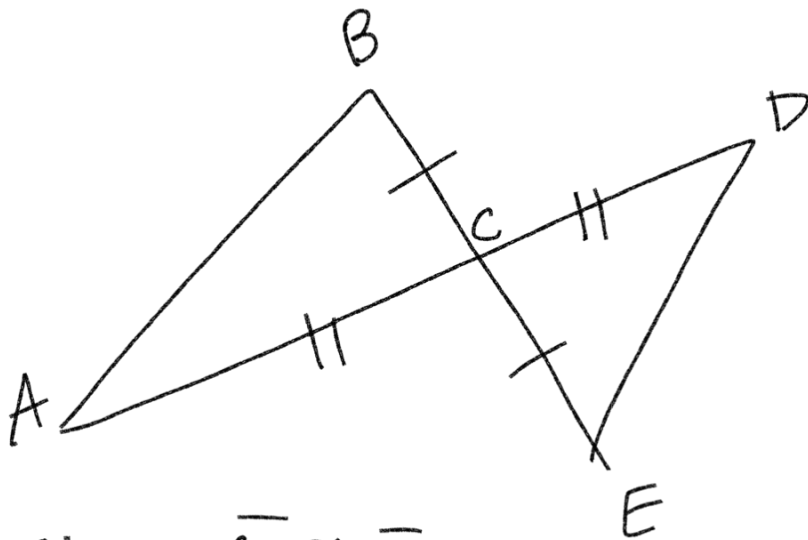
# Right Triangles



HL  
hypotenuse-Leg

Behaves like  
SSS

Pythagorean Theorem  
 $a^2 + b^2 = c^2$



CPCTC  
Corresponding Parts  
of congruent  
Triangles are Congruent  
"Communist Pandas  
can't train Capitals"  
"Colored Pandas  
can Tickle Charlie"  
"Communist Pandas"  
can throw children

Given:  $\overline{BC} \cong \overline{CE}$

$\overline{AC} \cong \overline{CD}$

Prove:  $\overline{AB} \cong \overline{DE}$

Statement

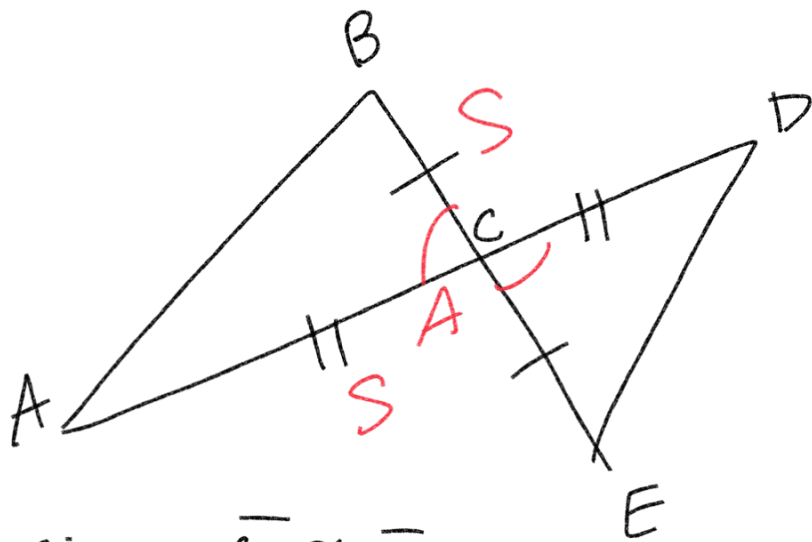
$\overline{BC} \cong \overline{CE}$

$\overline{AC} \cong \overline{CD}$

Reasons

given

given



Variable  
vertical  
 alt. interior  
 reflexive

Given:  $\overline{BC} \cong \overline{CE}$   
 $\overline{AC} \cong \overline{CD}$

Prove:  $\overline{AB} \cong \overline{DE}$

Statement

Reasons

$\overline{BC} \cong \overline{CE}$

given

$\overline{AC} \cong \overline{CD}$

given

$\angle ACB \cong \angle DCE$

vertical angles

$\triangle ACB \cong \triangle DCE$

SAS

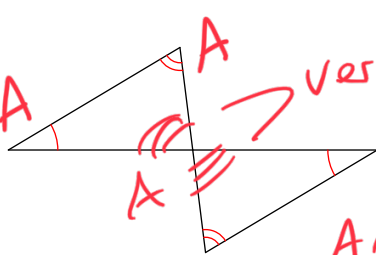
$\overline{AB} \cong \overline{DE}$

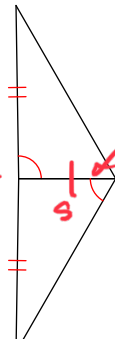
CPCCTC

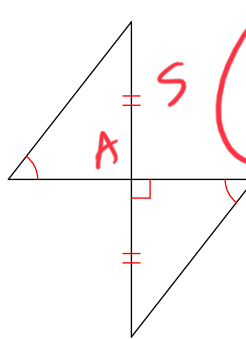
SSS, SAS, ASA,  
 AAS

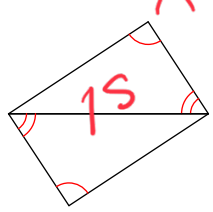
# Assignment

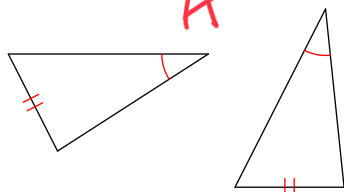
Determine if the two triangles are congruent. If they are, state how you know.

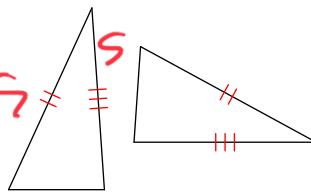
1)  *vertical*  
*AAA not congruent*

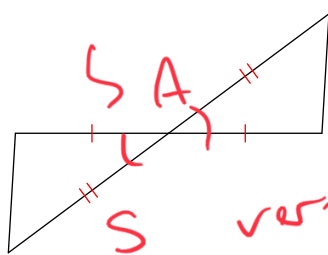
2)  *reflexive*  
*not congruent*

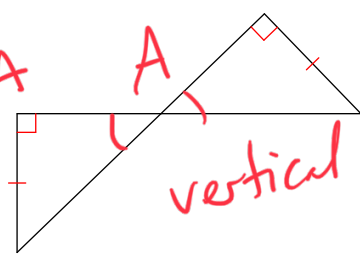
3)  *AAS*

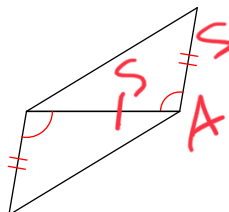
4)  *reflexive*  
*AAS*

5)  *not congruent*

6)  *not congruent*

7)  *SAS*  
*vertical*

8)  *AAS*

9)  *reflexive*  
*SAS*