

Given two triangles, we know that if all corresponding angles are congruent and all corresponding sides are congruent, then the two triangles are congruent.

However, it is possible to determine if two triangles are congruent even without knowing that all six corresponding parts are congruent!

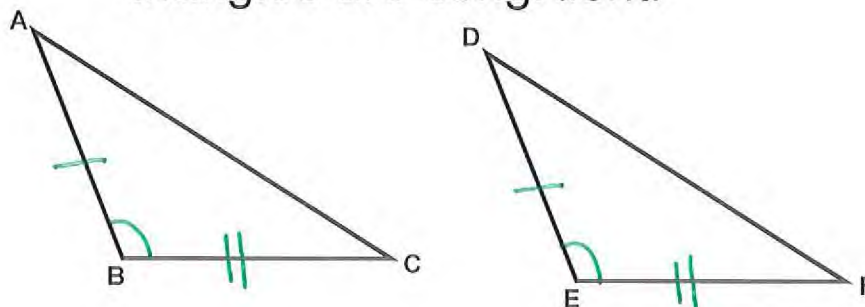
We can determine if two triangles are congruent using the **Triangle Congruence Theorems!**

Through the "Triangle Congruence Theorems", only **three** pairs of congruent corresponding parts are needed in order to conclude that two triangles are congruent.

# SAS

## Side-Angle-Side

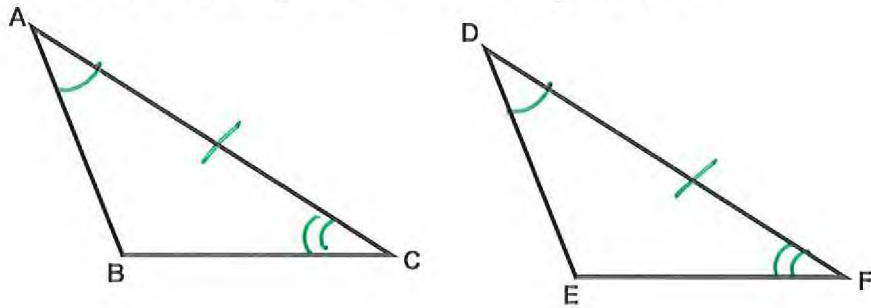
If two sides and the included angle of one triangle are congruent to two sides and the included angle of another triangle, then the triangles are congruent.



# ASA

## Angle-Side-Angle

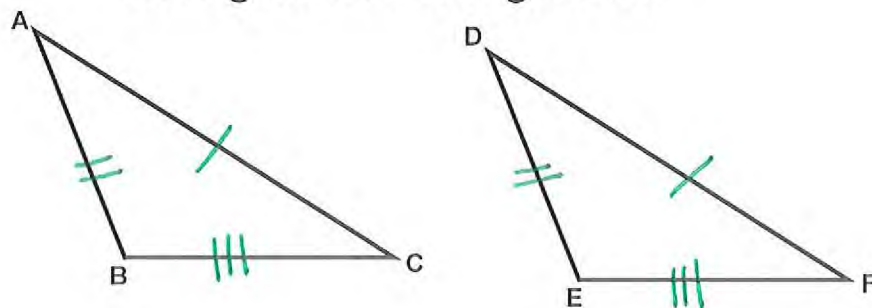
If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle, then the triangles are congruent.



# SSS

## Side-Side-Side

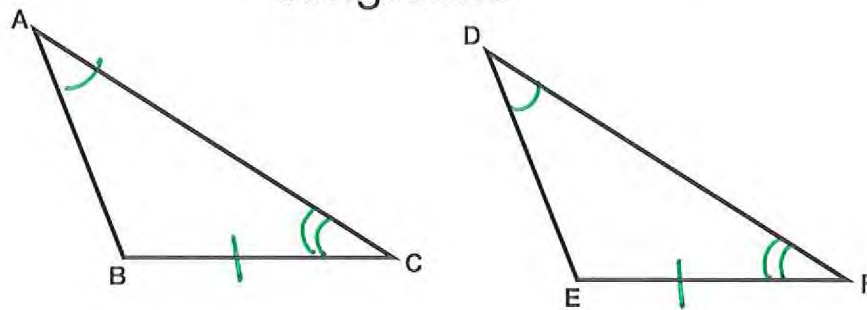
If three sides of one triangle are congruent to three sides of another triangle, then the triangles are congruent.



# AAS

## Angle-Angle-Side

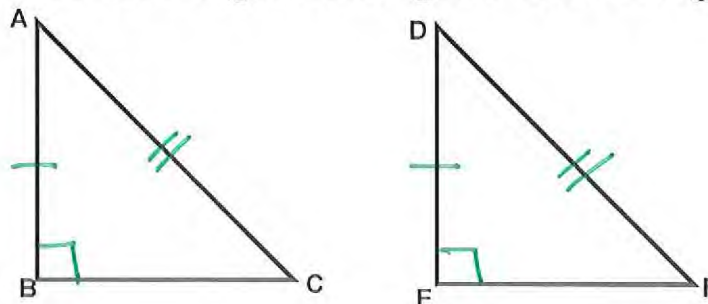
If two angles and a non-included side of one triangle are congruent to two angles and the corresponding non-included side of another triangle, then the triangles are congruent.



# HL

## Hypotenuse-Leg

If the hypotenuse and leg of one right triangle are congruent to the hypotenuse and corresponding leg of another right triangle, then the two right triangles are congruent.



## Triangle Congruence

The **five** Triangle Congruence Theorems are:

1. SSS

2. SAS

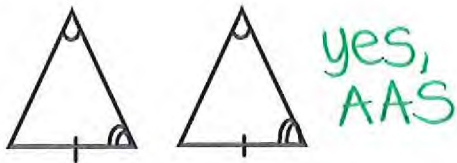
3. ASA

4. AAS

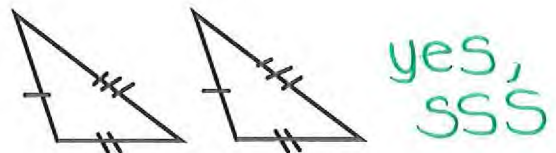
5. HL

Ex: State if the two triangles are congruent. If they are, state how you know.

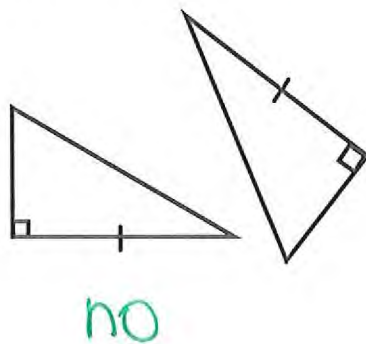
1.



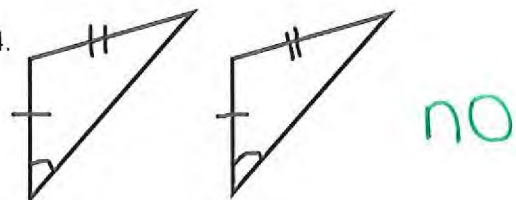
2.



3.



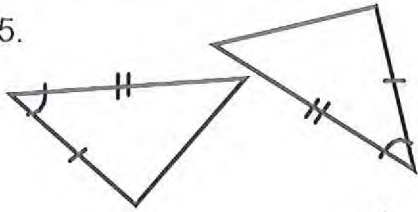
4.



# Triangle Congruence

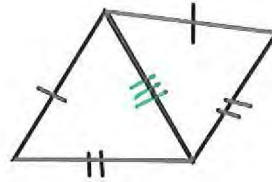
Ex: State if the two triangles are congruent. If they are, state how you know.

5.



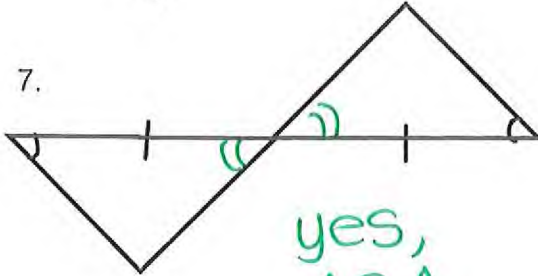
yes,  
SAS

6.



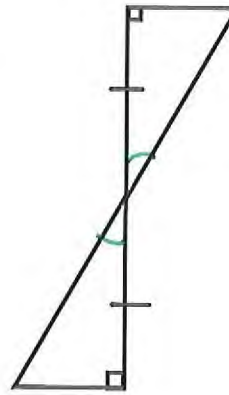
yes,  
SSS

7.



yes,  
ASA

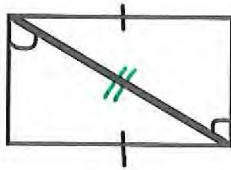
8.



yes,  
ASA

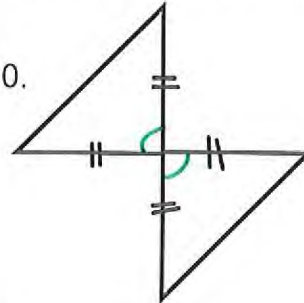
Ex: State if the two triangles are congruent. If they are, state how you know.

9.



no

10.



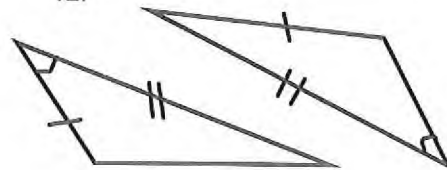
yes,  
SAS

11.



yes,  
AAS

12.



no