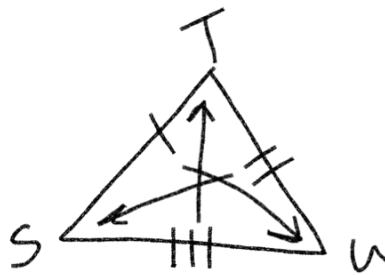
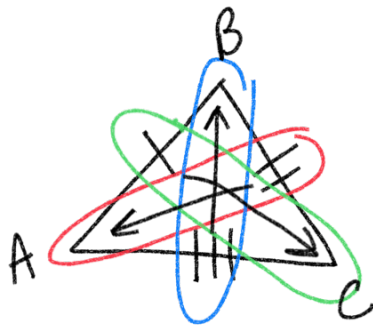


AAA similarity,
not a congruency.

Two Requirements for
Triangle Congruency

- 1.) You must have a representative from each angle - side pairing.
- 2.) Must have at least one congruent side.



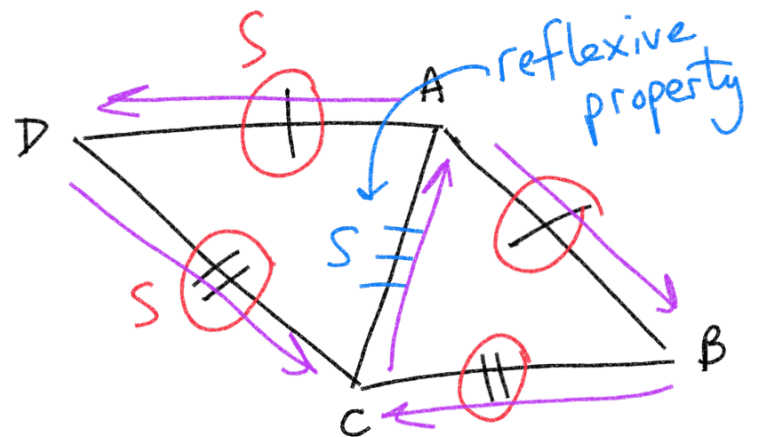
SSS

side-side-side
congruent

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

SSS

$$\triangle ABC \cong \triangle ADC$$

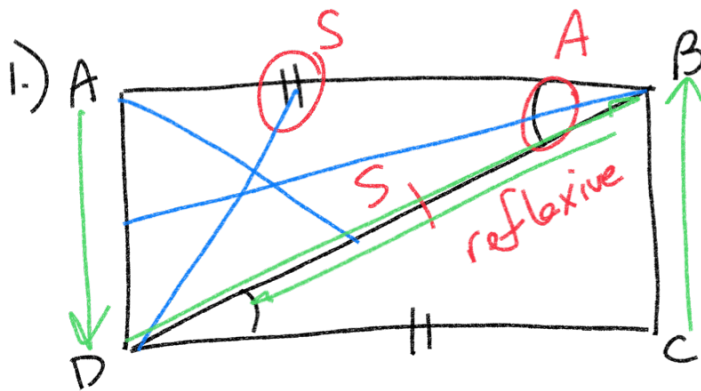
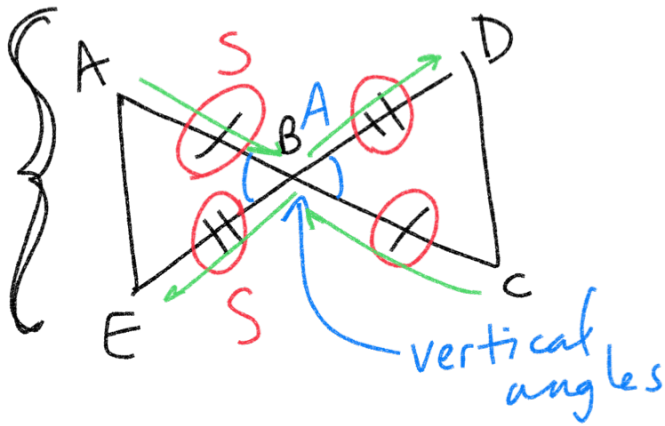




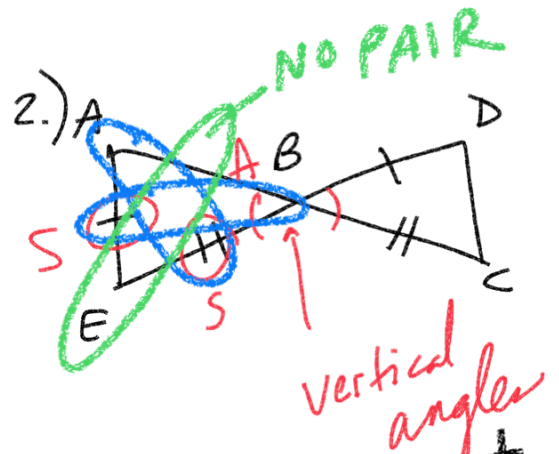
SAS
side-angle-side

SAS

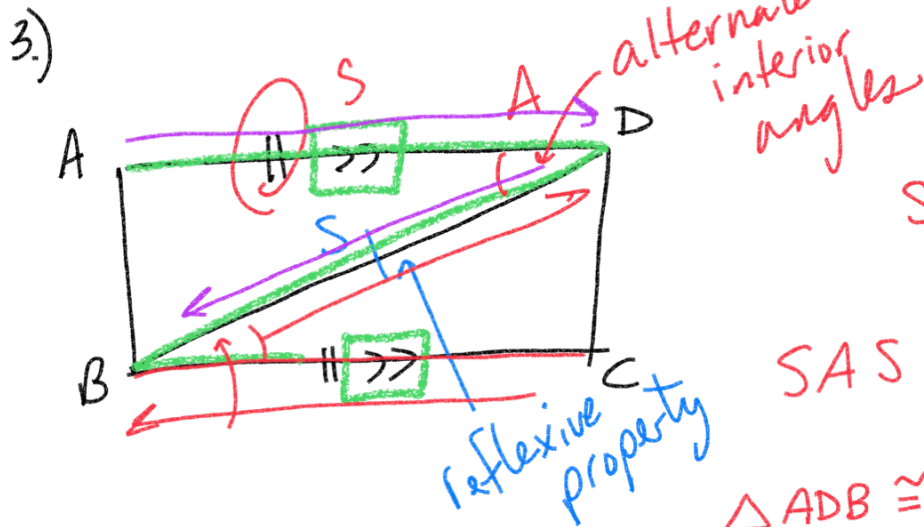
$$\triangle ABE \cong \triangle CBD$$



SAS $\triangle ADB \cong \triangle CBD$

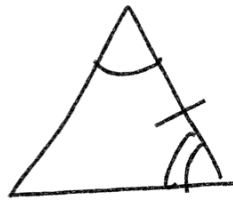


Not congruent



SAS

$$\triangle ADB \cong \triangle CBD$$



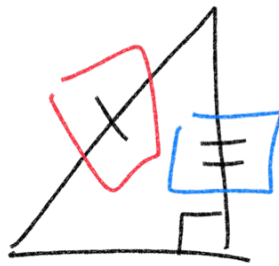
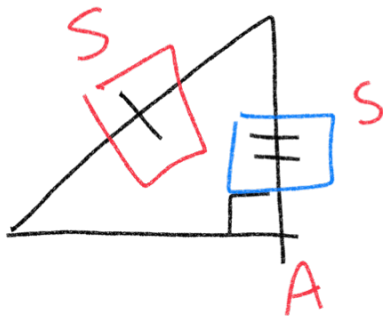
ASA
 angle-side-angle
 in between

if you have 2 congruent angles, you have 3.



AAS congruency
 side not between

because it gives you ASA



Right Triangles

HL

hypotenuse - leg

Behaves like SSS

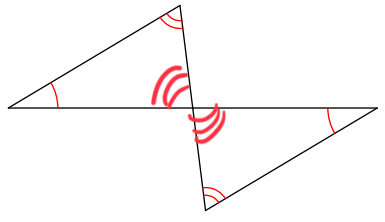
why? Pythagorean Theorem

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

Assignment

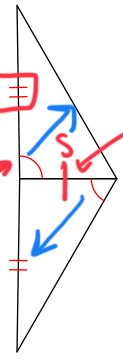
Determine if the two triangles are congruent. If they are, state how you know.

1)



AAA
Not congruent

2)



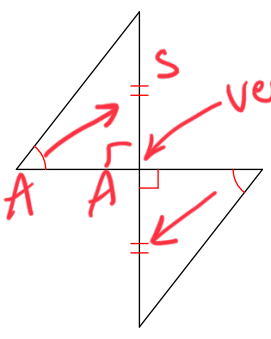
S
A

reflexive property

~~SAS~~

Not congruent

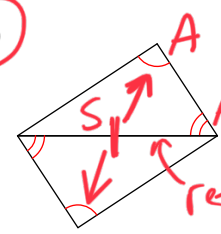
3)



vertical angles

AAS

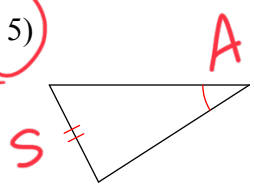
4)



reflexive

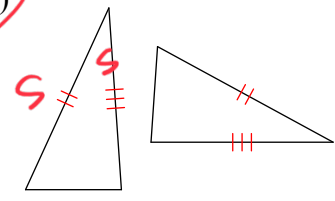
AAS

5)



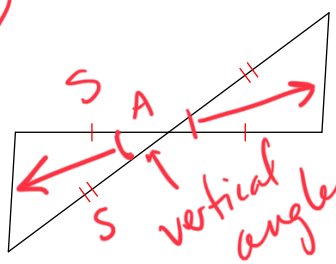
not congruent

6)



not congruent

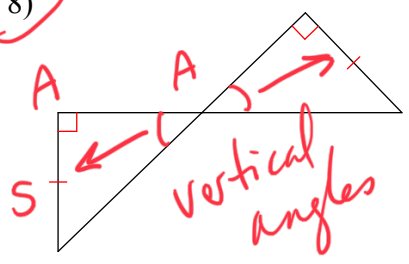
7)



vertical angles

SAS

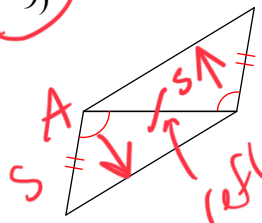
8)



vertical angles

AAS

9)



reflexive

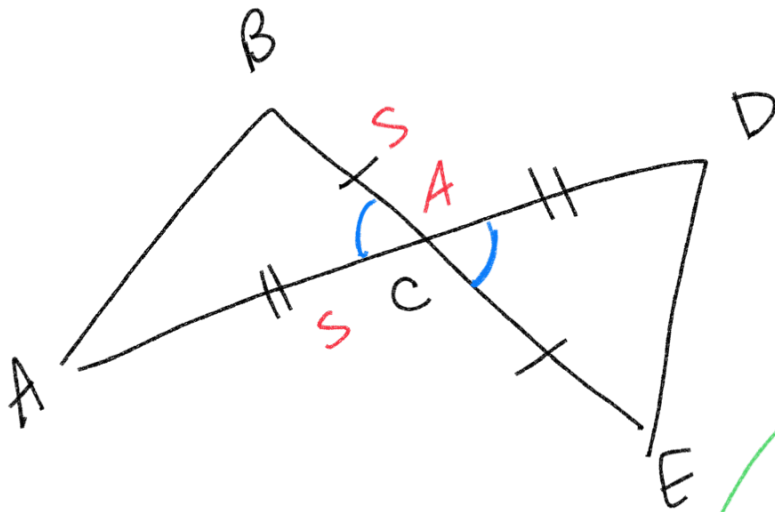
SAS

SSS/SAS/ASA/AAS

SSS SAS ASA AAS not congruent

CPCTC

Corresponding Parts of Congruent Triangles are Congruent



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

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

Statement

- ① $\left[\begin{array}{l} \overline{BC} \cong \overline{CE} \\ \overline{AC} \cong \overline{CD} \end{array} \right.$
- ② $\left[\angle BCA \cong \angle ECD \right.$
- ③ $\left[\triangle BCA \cong \triangle ECD \right.$
- ④ $\left[\overline{AB} \cong \overline{DE} \right.$

Reasons

Given ✓
 Given ✓

Reflexive ✓
 Alt Int \angle 's ✓
 Vertical ✓

Vertical angles

SAS
 SSS SAS ASA AAS

Triangle Congruency

CPCTC ✓