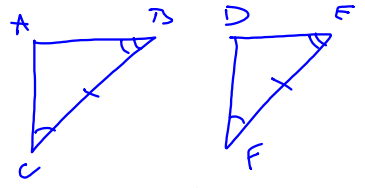
4.4 Proving Triangles Congruent using ASA, AAS

So far
SSS ps
SAS ps
> sides are important order important

ASA triangle congruence Ps

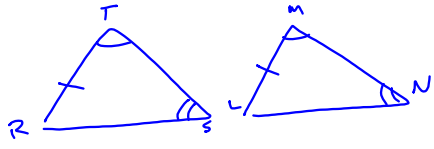
If two angles and the included side are congruent to two angles and the included side of another triangle
Then the triangles are congruent



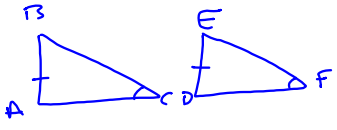
if $\angle C \cong \angle F$ A
$\overline{CB} \cong \overline{FE}$ S
$\angle B \cong \angle E$ A
then $\triangle ABC \cong \triangle DEF$

AAS congruence Theorem

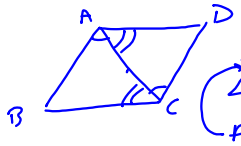
If Two angles and a non included side are congruent to two angles and a non included side of another $\triangle$
Then the triangles are congruent



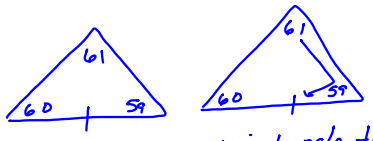
$\angle T \cong \angle M$ A
$\angle S \cong \angle N$ A
$\overline{RT} \cong \overline{LM}$ S
then $\triangle RTS \cong \triangle LMN$



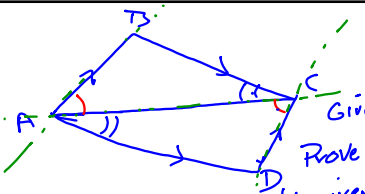
$\angle A \cong \angle D$ AAS
$\angle B \cong \angle E$



$\angle BAC \cong \angle DCA$
$\angle DAC \cong \angle BCA$
$\overline{AC} \cong \overline{AC}$
ASA

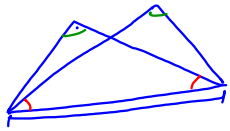


Use third angle then and a congruent side and since ASA is true AAS will always also be true

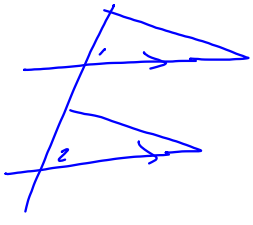


Given $\overline{AB} \parallel \overline{CD}$ $\overline{BC} \parallel \overline{AD}$
Prove $\triangle ABC \cong \triangle DCA$

1. $\overline{AB} \parallel \overline{CD}$ $\overline{BC} \parallel \overline{AD}$	1. given
2. $\angle BAC \cong \angle DCA$, $\angle DAC \cong \angle BCA$	2. Alt Int $\angle$'s
3 $\overline{AC} \cong \overline{AC}$	3 Reflexive
4. $\triangle ABC \cong \triangle DCA$	4 ASA



AAS



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