8.4 Congruent Triangles
ASA, AAS

In 8.3 we learned about Similar triangles
- ↳ All corresponding angles are congruent
- ↳ Corresponding sides are proportional

In $\cong$ $\triangle$'s
- All corresponding angles are congruent
- All corresponding sides have a scale of 1:1 or they are $\cong$

All 3 angles $\cong$
All 3 sides $\cong$
then $\triangle$'s are $\cong$

Need 6 parts

In 8.3
Third Angle Thm

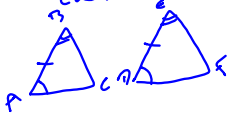
if $\angle A \cong \angle D$, $\angle B \cong \angle E$
1. then $\angle C \cong \angle F$
2. then $\triangle ABC \sim \triangle DEF$

If the ratio of the sides is 1:1 or 1 side is congruent to its corresponding side, then the $\triangle$'s are congruent

ASA (Angle-Side-Angle)

In between two angles

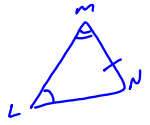
If two angles and the included side of one triangle are congruent to two angles and the included side of another triangle then the triangles are congruent



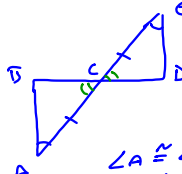
If $\angle A \cong \angle D$
$\angle B \cong \angle E$
$\overline{AB} \cong \overline{DE}$
Then $\triangle ABC \cong \triangle DEF$

AAS (Angle-Angle-Side)

Same concept as ASA, except the side is nonincluded (not between the 2 $\cong$ $\angle$'s)

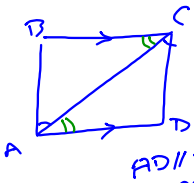


If $\angle L \cong \angle R$
$\angle M \cong \angle S$
$\overline{MN} \cong \overline{ST}$
Then $\triangle LMN \cong \triangle RST$



Given $\angle A \cong \angle E$
C is midpoint of $\overline{AE}$
Prove $\triangle ABC \cong \triangle EDC$

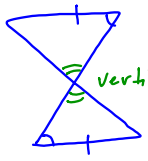
$\angle A \cong \angle E$	Given
C is midpoint of $\overline{AE}$	Given
$\overline{AC} \cong \overline{CE}$	Def of midpoint
$\angle ACB \cong \angle ECD$	Vertical $\angle$'s
$\triangle ABC \cong \triangle EDC$	ASA



Given $AD \parallel BC$
$\angle CAB \cong \angle ACD$

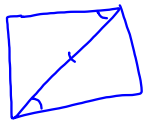
Prove $\triangle ACD \cong \triangle CAD$

$AD \parallel BC$	Given
$\angle DAC \cong \angle BCA$	Alt Int $\angle$'s
$\angle CAB \cong \angle ACD$	Given
$\overline{AC} \cong \overline{AC}$	Reflexive
$\triangle ACD \cong \triangle CAB$	ASA



Vertical $\angle$'s

This one is AAS



A, S

Not enough info
Be careful here
No parallel
No Alt Int $\angle$s