

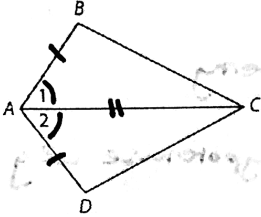
# Key

Write a paragraph proof.

Given:  $\overline{AB} \cong \overline{AD}$  and  $\angle 1 \cong \angle 2$

Prove:  $\triangle BAC \cong \triangle DAC$

SAS



$\overline{AB} \cong \overline{AD}$  because it is given.

$\angle 1 \cong \angle 2$  because it is given.

$\overline{AC} \cong \overline{AC}$  by the reflexive property.

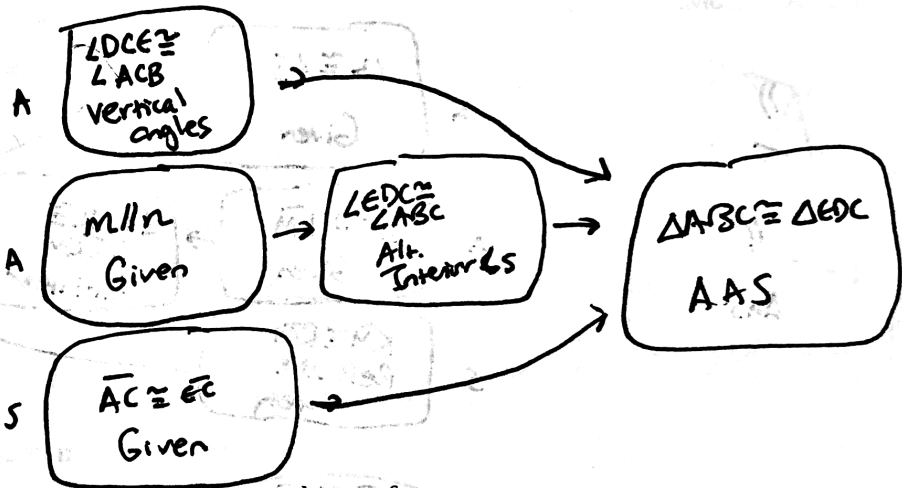
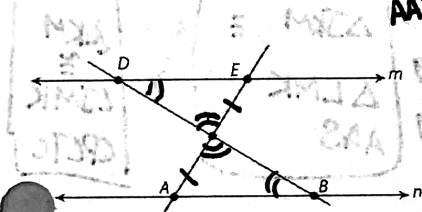
So,  $\triangle BAC \cong \triangle DAC$  by the SAS congruence shortcut.

Write a flowchart proof. \*could also be ASA

Given:  $\overline{AC} \cong \overline{EC}$  and  $m \parallel n$

Prove:  $\triangle ABC \cong \triangle EDC$

AAS

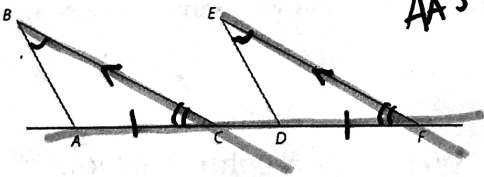


Write a paragraph proof.

Given:  $\angle ABC \cong \angle DEF$ ,  $\overline{BC} \parallel \overline{EF}$ ,  $\overline{AC} \cong \overline{DF}$ .

Prove:  $\triangle ABC$  is congruent to  $\triangle DEF$

AAS



$\angle ABC \cong \angle DEF$  - it is given.

$\overline{BC} \parallel \overline{EF}$  it is given. Therefore,

$\angle BCA \cong \angle FED$  by corresponding angles theorem.

$\overline{AC} \cong \overline{DF}$  - it is given.

$\triangle ABC \cong \triangle DEF$  by AAS.

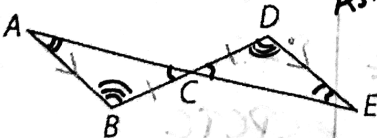
Write a two-column proof.

\*could also do AAS

Given:  $\overline{AB} \parallel \overline{DE}$ ,  $\overline{CB} \cong \overline{CD}$ .

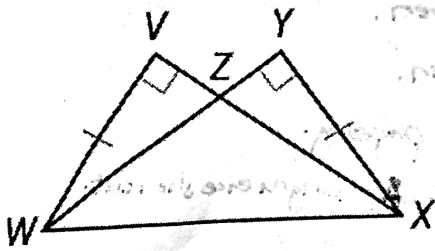
Prove:  $\triangle ABC \cong \triangle EDC$

AAS or ASA



Statements	Reasons
$\overline{AB} \parallel \overline{DE}$	Given
$\angle B \cong \angle D$	Alt. Interior angles
$\overline{CB} \cong \overline{CD}$	Given
$\angle ACB \cong \angle ECD$	vertical angles
$\triangle ABC \cong \triangle EDC$	ASA

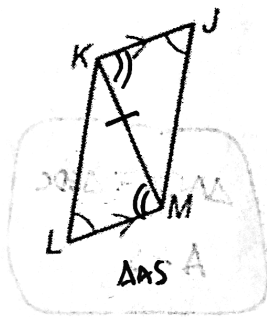
Determine whether there is enough information to prove that triangles  $\triangle VWX$  and  $\triangle YXW$  are congruent. Explain.



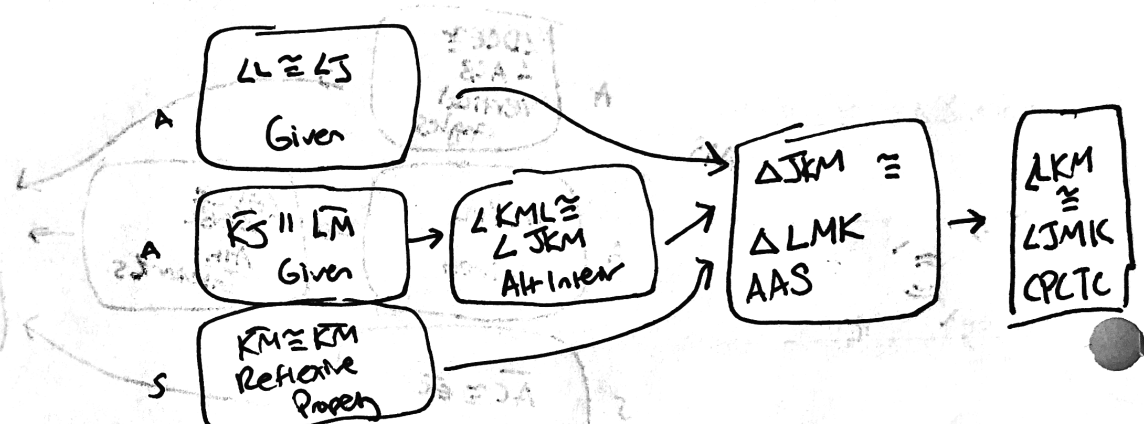
only  $\angle Y \cong \angle V$  they are congruent, right angles (given)  
 leg  $\rightarrow \overline{VW} \cong \overline{YX}$  Given  
 hypotenuse  $\rightarrow \overline{WX} \cong \overline{WX}$  Reflexive Property  
 $\triangle VWX \cong \triangle YXW$  by Hypotenuse Leg

Given:  $\angle L \cong \angle J$ ,  $\overline{KJ} \parallel \overline{LM}$

Prove:  $\angle LKM \cong \angle JMK$

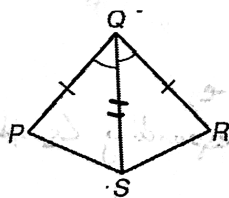


Write a proof (you can choose the type)

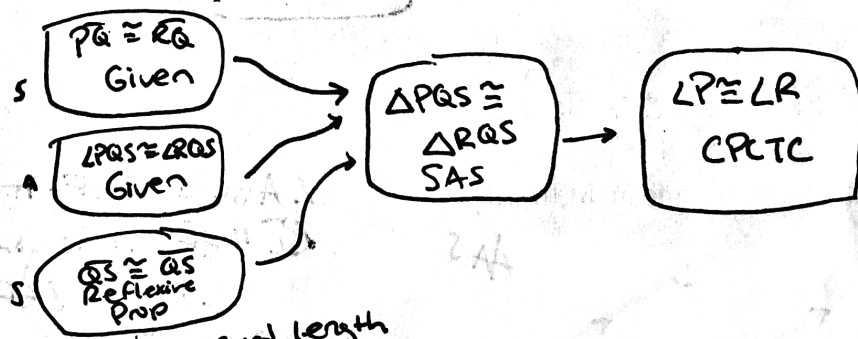


Given:  $\overline{PQ} \cong \overline{RQ}$ ,  $\angle PQS \cong \angle RQS$

Prove:  $\angle P \cong \angle R$

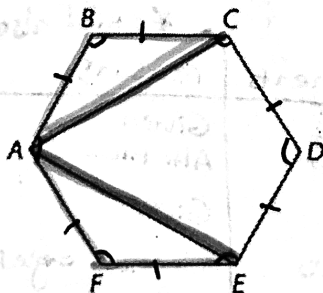


Write a proof (you can choose the type)



Given that polygon  $ABCDEF$  is a regular hexagon, prove that  $\overline{AC} \cong \overline{AE}$ .

Write a two-column proof.



Statements	Reasons
$\overline{BC} \cong \overline{FE}$	def. of regular hexagon
$\angle ABC \cong \angle AFE$	def. of regular hexagon
$\overline{AF} \cong \overline{AB}$	def. of regular hexagon
$\triangle ABC \cong \triangle AFE$	SAS
$\overline{AC} \cong \overline{AE}$	CPCTC