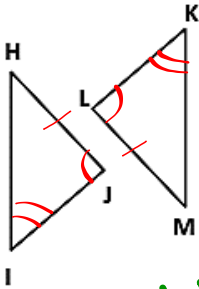


Proving Triangles Congruent

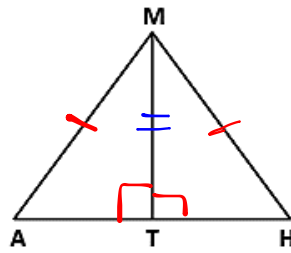
For each diagram, mark it with the given information, add any additional markings that are allowed, decided if they are congruent, and then give the congruence statement.

Given: $\overline{HJ} \cong \overline{LM}$
 $\angle J \cong \angle L$
 $m\angle I = m\angle K$



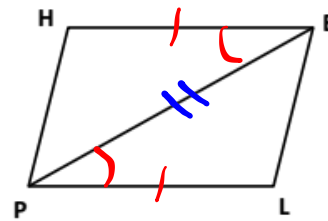
Congruence Rule: AAS
 Statement: $\triangle HIJ \cong \triangle MKL$

Given: $\overline{MT} \perp \overline{AH}$
 $\overline{MA} \cong \overline{MH}$



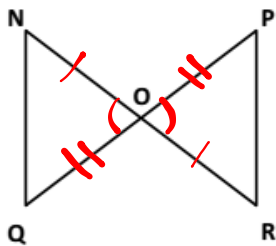
Congruence Rule: HL
 Statement: $\triangle MAT \cong \triangle MHT$

Given: $\angle HEP \cong \angle LPE$
 $\overline{HE} \cong \overline{PE}$



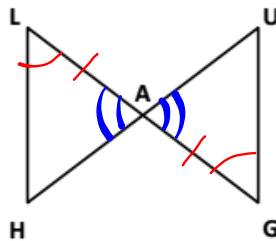
Congruence Rule: SAS
 Statement: $\triangle HEP \cong \triangle LPE$

Given: $\overline{NO} \cong \overline{OR}$
 $\overline{QO} \cong \overline{OP}$



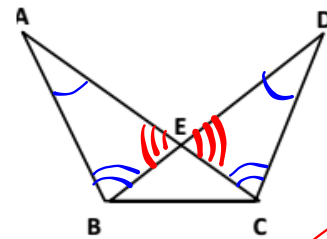
Congruence Rule: SAS
 Statement: $\triangle NOQ \cong \triangle ROP$

Given: $\angle A = \angle G$
 $\angle L \cong \angle G$



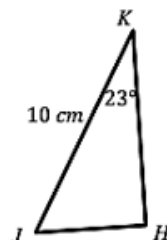
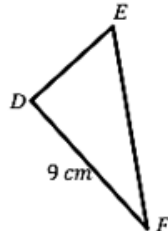
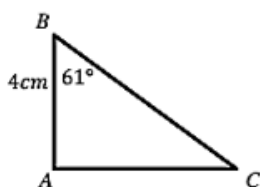
Congruence Rule: ASA
 Statement: $\triangle LAH \cong \triangle GAU$

Given: $\angle A \cong \angle D$
 $\angle ABE \cong \angle DCE$

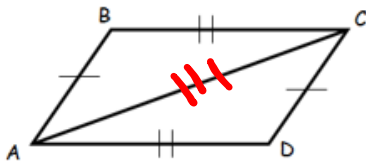


Congruence Rule: ~~AAA~~
 Statement: $\triangle ABE \cong$ NOT

Given: $\triangle ABC \cong \triangle DEF \cong \triangle HJK$, find the all missing angles and sides.

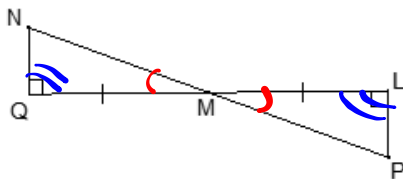


A. Given: $\overline{AB} \cong \overline{CD}$, $\overline{BC} \cong \overline{AD}$
 Prove: $\triangle ABC \cong \triangle CDA$



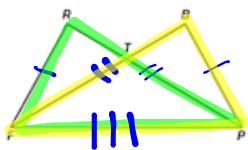
Statements	Reasons
$\overline{AB} \cong \overline{CD}$	Given
$\overline{BC} \cong \overline{AD}$	Given
$\overline{AC} \cong \overline{AC}$	Reflexive Prop.
$\triangle ABC \cong \triangle CDA$	SSS

B. Given: $\overline{QM} \cong \overline{ML}$ and $\angle QMN \cong \angle LMP$
 Prove: $\triangle NQM \cong \triangle PLM$



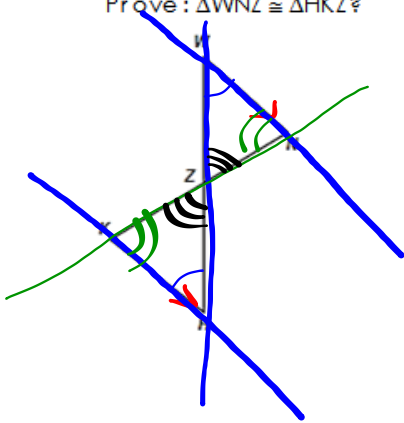
Statements	Reasons
$\overline{QM} \cong \overline{ML}$	Given
$\angle QMN \cong \angle LMP$	Given
$\angle NQM \cong \angle PLM$	Right Angles are \cong
$\triangle NQM \cong \triangle PLM$	ASA

C. Given: $\overline{RF} \cong \overline{BP}$ and $\overline{BF} \cong \overline{RP}$
 Prove: $\triangle RFP \cong \triangle BPF$



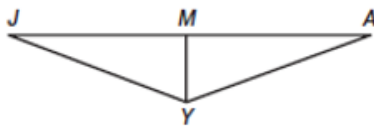
Statements	Reasons
$\overline{RF} \cong \overline{BP}$	Given
$\overline{BF} \cong \overline{RP}$	Given
$\overline{FP} \cong \overline{FP}$	Reflexive Prop.
$\triangle RFP \cong \triangle BPF$	SSS

D. Given: $\overline{WN} \parallel \overline{HK}$
 Prove: $\triangle WNZ \cong \triangle HKZ$?

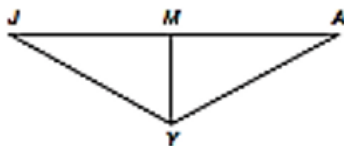


$\overline{WN} \parallel \overline{HK}$	Given
$\angle W \cong \angle H$	Alt. Int.
$\angle N \cong \angle K$	Alt. Int.
$\angle WZN \cong \angle HKZ$	vertical Angles
Not \cong AAA	

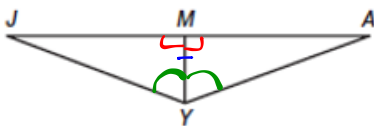
E. Given: $\overline{JA} \perp \overline{MY}$ and \overline{MY} bisects $\angle JYA$
 Prove: $\triangle JYM \cong \triangle AYM$?



F. Given: $\overline{JA} \perp \overline{MY}$ and $\overline{JY} \cong \overline{AY}$
 Prove: $\triangle JYM \cong \triangle AYM$?

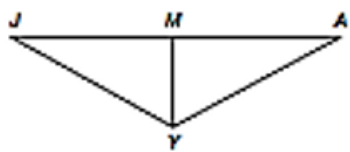


E. Given: $\overline{JA} \perp \overline{MY}$ and \overline{YM} bisects $\angle JYA$
 Prove: $\triangle JYM \cong \triangle AYM$?

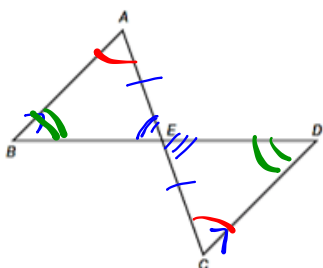


$\overline{JA} \perp \overline{MY}$ \overline{YM} bisects $\angle JYA$ $\angle JYM \cong \angle AYM$ $\angle JMY \cong \angle AMY$ $\overline{MY} \cong \overline{MY}$ $\triangle JYM \cong \triangle AYM$	Given Def of bisector Rt. Angles are \cong Reflexive Prop. ASA
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F. Given: $\overline{JA} \perp \overline{MY}$ and $\overline{JY} \cong \overline{AY}$
 Prove: $\triangle JYM \cong \triangle AYM$?

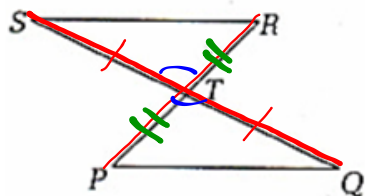


G. Given: $\overline{AB} \parallel \overline{CD}$ and $\overline{AE} \cong \overline{CE}$
 Prove: $\triangle ABE \cong \triangle CDE$?



$\overline{AB} \parallel \overline{CD}$ $\overline{AE} \cong \overline{CE}$ $\angle A \cong \angle C$ $\angle D \cong \angle B$ $\triangle ABE \cong \triangle CDE$	Given Alt. Int Alt. Int. AAS
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H. Given: \overline{SQ} and \overline{PR} bisect each other
 Prove: $\triangle RST \cong \triangle PQT$



\overline{SQ} and \overline{PR} bisect each other $\overline{ST} \cong \overline{QT}$ $\overline{PT} \cong \overline{RT}$ $\angle STR \cong \angle QTP$ $\triangle RST \cong \triangle PQT$	Given Def. of bisect Def. of bisect Vertical Angles SAS
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