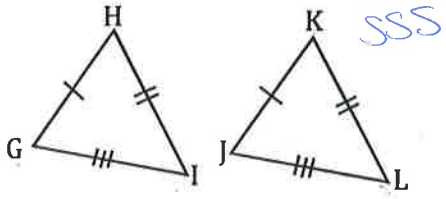
Write a two column proof for each.

16. Given: $\overline{GH} \cong \overline{JK}$, $\overline{HI} \cong \overline{KL}$, and $\overline{IG} \cong \overline{LJ}$

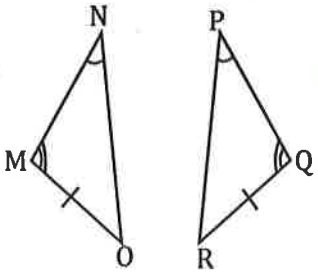


SSS

Prove: $\angle I \cong \angle L$

Statements	Reasons
(s) $\overline{GH} \cong \overline{JK}$	Given
(s) $\overline{HI} \cong \overline{KL}$	Given
(s) $\overline{IG} \cong \overline{LJ}$	Given
$\triangle GHI \cong \triangle JKL$	SSS
$\angle I \cong \angle L$	CPCTC

17. Given: $\angle N \cong \angle P$, $\angle M \cong \angle Q$, and $\overline{MO} \cong \overline{QR}$

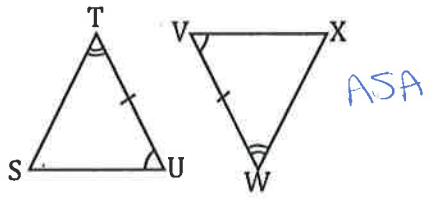


AAS

Prove: $\angle O \cong \angle R$

Statements	Reasons
(a) $\angle N \cong \angle P$	Given
(a) $\angle M \cong \angle Q$	Given
(s) $\overline{MO} \cong \overline{QR}$	Given
$\triangle NMO \cong \triangle PQR$	AAS
$\angle O \cong \angle R$	CPCTC

18. Given: $\angle U \cong \angle V$, $\angle T \cong \angle W$, and $\overline{TU} \cong \overline{VW}$

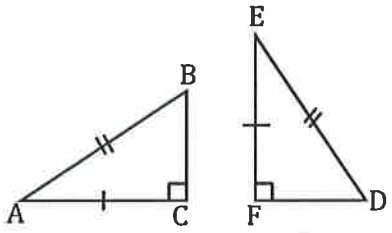


ASA

Prove: $\angle S \cong \angle X$

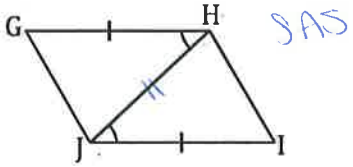
Statements	Reasons
(a) $\angle U \cong \angle V$	Given
(s) $\overline{TU} \cong \overline{VW}$	Given
(a) $\angle T \cong \angle W$	Given
$\triangle STU \cong \triangle XWV$	ASA
$\angle S \cong \angle X$	CPCTC

19. Given: $\overline{AC} \cong \overline{EF}$, and $\overline{AB} \cong \overline{ED}$



Prove: $\overline{BC} \cong \overline{FD}$

20. Given: $\overline{GH} \cong \overline{JI}$, $\angle GHJ \cong \angle IJH$

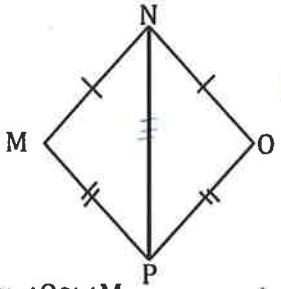


SAS

Prove: $\overline{GJ} \cong \overline{HI}$

Statements	Reasons
(s) $\overline{GH} \cong \overline{JI}$	Given
(a) $\angle GHJ \cong \angle IJH$	Given
(s) $\overline{HJ} \cong \overline{HJ}$	Reflexive prop $\cong$ segs
$\triangle GHJ \cong \triangle IJH$	SAS
$\overline{GJ} \cong \overline{HI}$	CPCTC

21. Given: $\overline{MN} \cong \overline{NO}$, $\overline{MP} \cong \overline{OP}$

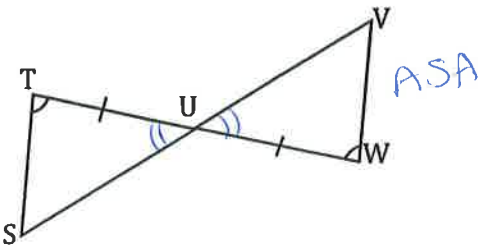


SSS

Prove: $\angle O \cong \angle M$

Statements	Reasons
(s) $\overline{MN} \cong \overline{NO}$	Given
(s) $\overline{MP} \cong \overline{OP}$	Given
(s) $\overline{NP} \cong \overline{NP}$	Reflexive prop $\cong$ segs
$\triangle NMP \cong \triangle NOP$	SSS
$\angle O \cong \angle M$	CPCTC

22. Given: $\overline{TU} \cong \overline{WU}$, $\angle T \cong \angle W$

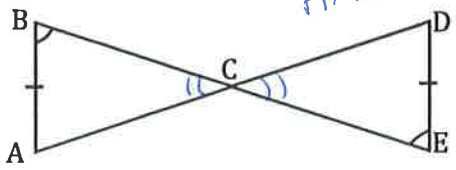


ASA

Prove: $\overline{TS} \cong \overline{WV}$

Statements	Reasons
(a) $\angle T \cong \angle W$	Given
(s) $\overline{TU} \cong \overline{WU}$	Given
(a) $\angle TUS \cong \angle WUV$	vertical $\angle$s are $\cong$
$\triangle TUS \cong \triangle WUV$	ASA
$\overline{TS} \cong \overline{WV}$	CPCTC

23. Given: $\overline{AB} \cong \overline{DE}$, $\angle B \cong \angle E$

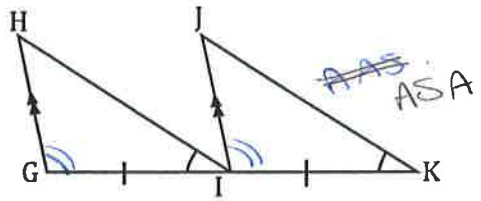


AAS.

Prove: $\overline{AC} \cong \overline{DC}$

Statements	Reasons
(a) $\angle B \cong \angle E$	Given
(a) $\angle BCA \cong \angle ECD$	vertical $\angle$s are $\cong$
(s) $\overline{AB} \cong \overline{DE}$	Given
$\triangle ABC \cong \triangle DEC$	AAS
$\overline{AC} \cong \overline{DC}$	CPCTC

24. Given: $\overline{HG} \parallel \overline{JI}$, $\overline{GI} \cong \overline{IK}$, and $\angle HIG \cong \angle JKI$

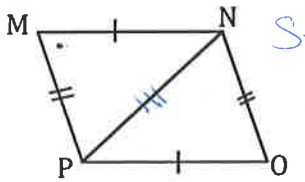


~~AAS~~ ASA

Prove: ~~$\angle G \cong \angle F$~~ $\angle H \cong \angle J$

Statements	Reasons
(a) $\angle HIG \cong \angle JKI$	Given
(s) $\overline{GI} \cong \overline{IK}$	Given
know $\overline{HG} \parallel \overline{JI}$	Given
(a) $\angle HGI \cong \angle JIK$	corresponding $\angle$s post.
$\triangle HGI \cong \triangle JIK$	ASA
$\angle H \cong \angle J$	CPCTC

25. Given: $\overline{MN} \cong \overline{PO}$, $\overline{MP} \cong \overline{NO}$

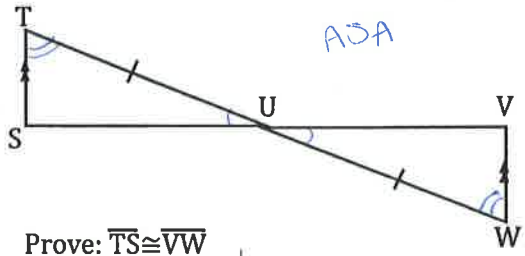


SSS.

Prove: $\angle M \cong \angle O$

Statements	Reasons
(s) $\overline{MN} \cong \overline{PO}$	Given
(s) $\overline{MP} \cong \overline{NO}$	Given
(s) $\overline{PN} \cong \overline{PN}$	Reflexive prop $\cong$ segs.
$\triangle MNP \cong \triangle$ ~~OPN~~ OPN	SSS
$\angle M \cong \angle O$	CPCTC

26. Given: $\overline{TS} \parallel \overline{VW}$, $\overline{TU} \cong \overline{WU}$

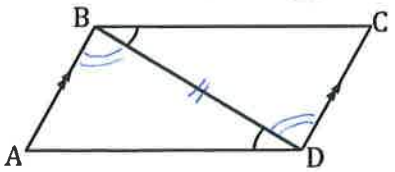


ASA

Prove: $\overline{TS} \cong \overline{VW}$

Statements	Reasons
(A) $\angle TUS \cong \angle WUV$	vertical $\angle$s are $\cong$
(s) $\overline{TU} \cong \overline{WU}$	Given
~~(a)~~ $\overline{TS} \parallel \overline{VW}$	Given
(a) $\angle T \cong \angle W$	alt. int. $\angle$s theorem
$\triangle STU \cong \triangle VWU$	ASA
$\overline{TS} \cong \overline{VW}$	CPCTC

27. Given: $\overline{AB} \parallel \overline{DE}$, $\angle CBD \cong \angle ADB$



ASA.

Prove: $\overline{BC} \cong \overline{AD}$

Statements	Reasons
$\overline{AB} \parallel \overline{DE}$	Given
(a) $\angle ABD \cong \angle CDB$	alt. int. $\angle$s theorem.
(s) $\overline{BD} \cong \overline{BD}$	reflexive prop $\cong$ segs.
(a) $\angle CBD \cong \angle ADB$	Given
$\triangle ABD \cong \triangle CDB$	ASA
$\overline{BC} \cong \overline{AD}$	CPCTC.