

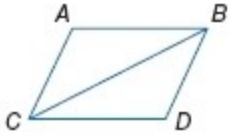
4-5 Proving Triangles Congruent - ASA, AAS

PROOF Write the specified type of proof.

1. two-column proof

Given: \overline{CB} bisects $\angle ABD$ and $\angle ACD$.

Prove: $\triangle ABC \cong \triangle DBC$



ANSWER:

Proof:

Statements (Reasons)

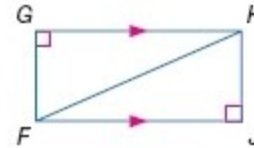
1. \overline{CB} bisects $\angle ABD$ and $\angle ACD$. (Given)
2. $\angle ABC \cong \angle DBC$ (Def. of \angle bisector)
3. $\overline{BC} \cong \overline{BC}$ (Refl. Prop.)
4. $\angle ACB \cong \angle DCB$ (Def. of \angle bisector)
5. $\triangle ABC \cong \triangle DBC$ (ASA)

4. two-column proof

Given: $\overline{GH} \parallel \overline{FJ}$

$m\angle G = m\angle J = 90$

Prove: $\triangle HJF \cong \triangle FGH$



ANSWER:

Proof:

Statements (Reasons)

1. $\overline{GH} \parallel \overline{FJ}$, $m\angle G = m\angle J = 90$ (Given)
2. $\angle G \cong \angle J$ (Def. of $\cong \angle$ s.)
3. $\angle GHF \cong \angle JFH$ (Alt. Int. \angle s are \cong .)
4. $\overline{HF} \cong \overline{FH}$ (Ref. Prop.)
5. $\triangle HJF \cong \triangle FGH$ (AAS)

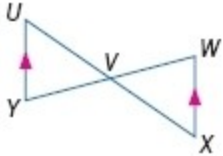
4-5 Proving Triangles Congruent - ASA, AAS

PROOF Write a two-column proof.

9. **Given:** V is the midpoint of \overline{YW} ;

$$\overline{UY} \parallel \overline{XW}.$$

Prove: $\triangle UVY \cong \triangle XVW$



ANSWER:

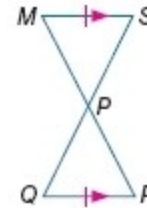
Proof:

Statements (Reasons)

1. V is the midpoint of \overline{YW} ; $\overline{UY} \parallel \overline{XW}$. (Given)
2. $\overline{YV} \cong \overline{VW}$ (Midpoint Theorem)
3. $\angle VWX \cong \angle VYU$ (Alt. Int. \angle Thm.)
4. $\angle VUY \cong \angle VXW$ (Alt. Int. \angle Thm.)
5. $\triangle UVY \cong \triangle XVW$ (AAS)

10. **Given:** $\overline{MS} \cong \overline{RQ}$, $\overline{MS} \parallel \overline{RQ}$

Prove: $\triangle MSP \cong \triangle RQP$



ANSWER:

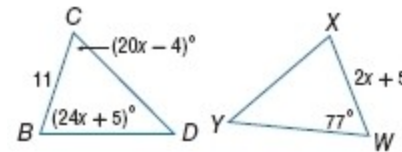
Proof:

Statements (Reasons)

1. $\overline{MS} \cong \overline{RQ}$, $\overline{MS} \parallel \overline{RQ}$ (Given)
2. $\angle SPM \cong \angle QPR$ (Vert. \angle s are \cong .)
3. $\angle SMP \cong \angle QRP$ (Alt. Int. \angle Thm.)
4. $\triangle MSP \cong \triangle RQP$ (AAS)

ALGEBRA Find the value of the variable that yields congruent triangles.

14. $\triangle BCD \cong \triangle WXY$

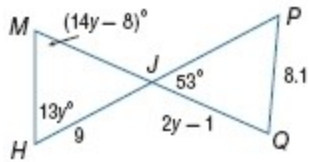


ANSWER:

$$x = 3$$

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15. $\triangle MHJ \cong \triangle PQJ$



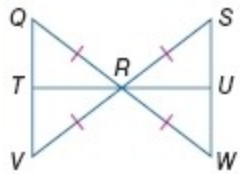
ANSWER:

$y = 5$

PROOF Write a two-column proof.

20. **Given:** $\overline{QR} \cong \overline{SR} \cong \overline{WR} \cong \overline{VR}$

Prove: $\overline{QT} \cong \overline{WU}$



ANSWER:

Proof:

Statements (Reasons)

1. $\overline{QR} \cong \overline{SR} \cong \overline{WR} \cong \overline{VR}$ (Given)
2. $\angle QRV \cong \angle SRW$ (Vert. \angle s are \cong .)
3. $\triangle VRQ \cong \triangle SRW$ (SAS)
4. $\angle VQR \cong \angle SWR$ (CPCTC)
5. $\angle QRT \cong \angle URW$ (Vert. \angle s are \cong .)
6. $\triangle URW \cong \triangle TRQ$ (ASA)
7. $\overline{QT} \cong \overline{WU}$ (CPCTC)