

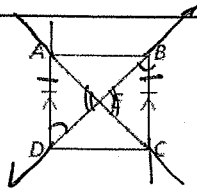
Triangle Proofs Worksheet

For each problem below, write a two-column proof on a separate piece of paper.

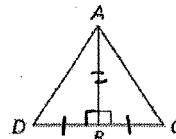
I. Proving Triangles Congruent:

1. Use AAS to prove the triangles congruent.

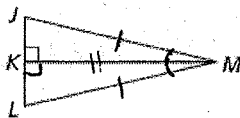
Given: $\overline{AD} \parallel \overline{BC}$, $\overline{AD} \cong \overline{CB}$
 Prove: $\triangle AED \cong \triangle CEB$



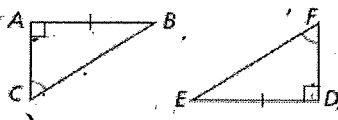
5. Given: B is the midpoint of \overline{DC} . $\overline{AB} \perp \overline{DC}$
 Prove: $\triangle ABD \cong \triangle ABC$



2. Given: $\overline{KM} \perp \overline{JL}$, $\overline{JM} \cong \overline{LM}$, $\angle JMK \cong \angle LMK$
 Prove: $\triangle JKM \cong \triangle LKM$

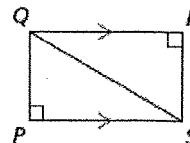


3. Given: $\overline{AB} \cong \overline{DE}$, $\angle C \cong \angle F$
 Prove: $\triangle ABC \cong \triangle DEF$



ASA

6. Use AAS to prove the triangles congruent.
 Given: $\angle R$ and $\angle P$ are right angles.
 $\overline{QR} \parallel \overline{SP}$
 Prove: $\triangle QPS \cong \triangle SRQ$

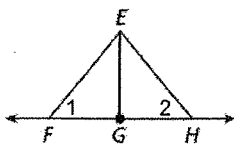


4. Given: $\overline{JK} \cong \overline{ML}$, $\angle JKL \cong \angle MLK$
 Prove: $\triangle JKL \cong \triangle MLK$

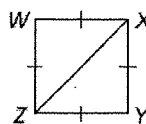


II. Using CPCTC

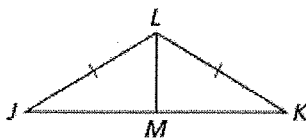
7. Given: G is the midpoint of \overline{FH} .
 $\overline{EG} \cong \overline{EH}$
 Prove: $\angle 1 \cong \angle 2$



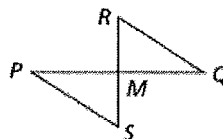
10. Given: $\overline{WX} \cong \overline{XY} \cong \overline{YZ} \cong \overline{ZW}$
 Prove: $\angle W \cong \angle Y$



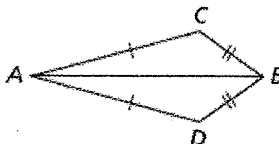
8. Given: \overline{LM} bisects $\angle JLK$. $\overline{JL} \cong \overline{KL}$
 Prove: M is the midpoint of \overline{JK} .



11. Given: M is the midpoint of \overline{PQ} and \overline{RS} .
 Prove: $\overline{QR} \cong \overline{PS}$



9. Given: $\overline{AC} \cong \overline{AD}$, $\overline{CB} \cong \overline{DB}$
 Prove: \overline{AB} bisects $\angle CAD$.



Triangle Proof Worksheet

	Statements	Reasons
①	① $\overline{AD} \cong \overline{CB}$ $\overline{AD} \parallel \overline{CB}$	① Given
	② $\angle ADE \cong \angle CBE$	② If lines \parallel , then Alt. Int. \angle 's \cong .
	③ $\angle AED \cong \angle CEB$	③ Def. of Vertical Angles
	④ $\triangle AED \cong \triangle CEB$	④ AAS

	Statements	Reasons
②	① $\overline{JM} \cong \overline{LM}$ $\angle JMK \cong \angle LMK$	① Given
	② $\overline{KM} \cong \overline{KM}$	② Reflexive Prop. of congruence
	③ $\triangle JKM \cong \triangle LKM$	③ SAS

OR!!!

①	$\overline{JM} \cong \overline{LM} + \overline{KM} \perp \overline{JL}$	① Given
②	$\angle JKM$ is a right angle $\angle LKM$ is a right angle	② Def. of Perpendicular Lines
③	$\triangle JKM$ is a right \triangle $\triangle LKM$ is a right \triangle	③ Def. of Right triangle.
④	$\overline{KM} \cong \overline{KM}$	④ Reflexive Prop. of Congruence
⑤	$\triangle JKM \cong \triangle LKM$	⑤ HL

③ ~~ASA #3~~ ASA #3

	Statements	Reasons
④	① $\overline{JK} \cong \overline{ML}$, $\angle JKL \cong \angle MLK$	① Given
	② $\overline{KL} \cong \overline{KL}$	② Reflexive Prop. of Congruence
	③ $\triangle JKL \cong \triangle MLK$	③ SAS

	Statements	Reasons
⑤	① B is the midpoint of \overline{DC}	① Given
	② $\overline{DB} \cong \overline{CB}$	② Def. of midpoint
	③ $\overline{AB} \cong \overline{AB}$	③ Reflexive Prop. of Congruence
	④ $\overline{AB} \perp \overline{DC}$	④ Given
	⑤ $\angle DBA$ is a right angle $\angle CBA$ is a right angle	⑤ Def. of Perpendicular Lines.
	⑥ $\angle DBA \cong \angle CBA$	⑥ Def. of Right Angle. All Rt. \angle 's \cong .
	⑦ $\triangle ABD \cong \triangle ABC$	⑦ SAS

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Statements	Reasons
① $\angle R$ and $\angle P$ are Right Angles	① Given
② $\angle R \cong \angle P$	② Def. of Right Angles. All Rt. \angle s \cong
③ $\overline{QR} \parallel \overline{SP}$	③ Given
④ $\angle PSQ \cong \angle RQS$	④ If lines \parallel , then Alt. Int. \angle s \cong .
⑤ $\overline{QS} \cong \overline{QS}$	⑤ Reflexive Prop. of congruence.
⑥ $\triangle QPS \cong \triangle SRQ$	⑥ AAS

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Statements	Reasons
① $\overline{EF} \cong \overline{EH}$ G is midpoint \overline{FH}	① Given
② $\overline{FG} \cong \overline{HG}$	② Def. of Midpoint
③ $\overline{EG} \cong \overline{EG}$	③ Reflexive Prop. of congruence
④ $\triangle FGE \cong \triangle HGE$	④ SSS
⑤ $\angle 1 \cong \angle 2$	⑤ CPCTC

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Statements	Reasons
① $\overline{JL} \cong \overline{KL} \cong \overline{LM}$ bisects $\angle JKL$	① Given
② $\triangle JLM \cong \triangle KLM$	② Def. of Angle Bisector
③ $\overline{LM} \cong \overline{LM}$	③ Reflexive Prop. of congruence
④ $\triangle JLM \cong \triangle KLM$	④ SAS
⑤ $\overline{JM} \cong \overline{KM}$	⑤ CPCTC
⑥ M is midpoint of \overline{JK}	⑥ Def. of Midpoint

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Statements	Reasons
① $\overline{AC} \cong \overline{AD}$, $\overline{CB} \cong \overline{DB}$	① Given
② $\overline{AB} \cong \overline{AB}$	② Reflexive Prop. of Congruence
③ $\triangle ABC \cong \triangle ABD$	③ SSS
④ $\angle CAB \cong \angle DAB$	④ CPCTC
⑤ \overline{AB} bisects $\angle CAD$	⑤ Def. of \angle Bisector

Statements	Reasons
① $\overline{WX} \cong \overline{XY} \cong \overline{YZ} \cong \overline{ZW}$	① Given
② $\overline{ZX} \cong \overline{ZX}$	② Reflexive Prop. of congruence
③ $\triangle ZWX \cong \triangle XYZ$	③ SSS
④ $\angle W \cong \angle Y$	④ CPCTC

Statements	Reasons
① M is midpoint of \overline{PA} and \overline{PS}	① Given
② $\overline{PM} \cong \overline{QM}$ $\overline{RM} \cong \overline{SM}$	② Def. of Midpoint
③ $\angle SMP \cong \angle RMQ$	③ Def. of Vertical Angles
④ $\triangle SMP \cong \triangle RMQ$	④ SAS
⑤ $\overline{QR} \cong \overline{PS}$	⑤ CPCTC