

Geometry, Unit 4 - Congruent Triangles Proof Activity - Part I

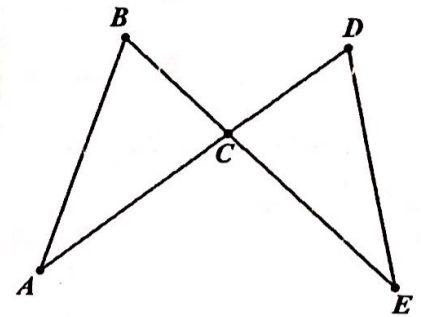
Name _____

For each problem, do the following:

- Show the given information in the diagram (using tick marks to show congruent sides and arcs to show congruent angles)
- Show any other congruent parts you notice (from vertical angles, sides shared in common, or alternate interior angles with parallel lines)
- Give the postulate or theorem that proves the triangles congruent (SSS, SAS, ASA, AAS, HL)
- Finally, fill in the blanks to complete the proof.

1.

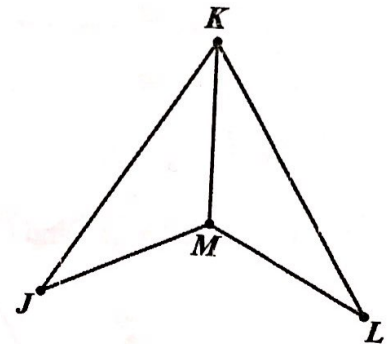
Given: $\overline{BC} \cong \overline{DC}$; $\overline{AC} \cong \overline{EC}$
 Prove: $\triangle BCA \cong \triangle DCE$



Statements	Reasons
1.	1. Given
2.	2. Vertical \angle s Theorem
3. $\triangle BCA \cong \triangle DCE$	3.

2.

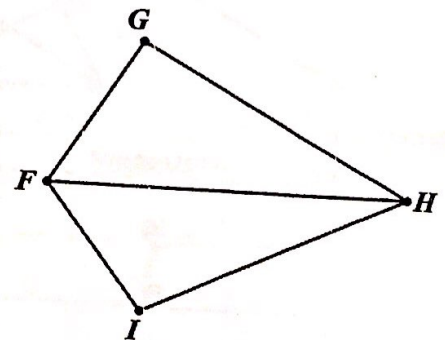
Given: $\overline{JK} \cong \overline{LK}$; $\overline{JM} \cong \overline{LM}$
 Prove: $\triangle KJM \cong \triangle KLM$



Statements	Reasons
1.	1.
2.	2. Reflexive Prop.
3.	3.

3.

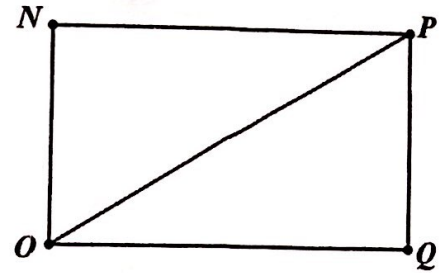
Given: $\angle G \cong \angle I$; \overline{FH} bisects $\angle GFI$
 Prove: $\triangle GFH \cong \triangle IFH$



Statements	Reasons
1. $\angle G \cong \angle I$; \overline{FH} bisects $\angle GFI$	1.
2. $\angle GFH \cong \angle IFH$	2. Def. of _____
3.	3. Reflexive Prop.
4.	4.

4.

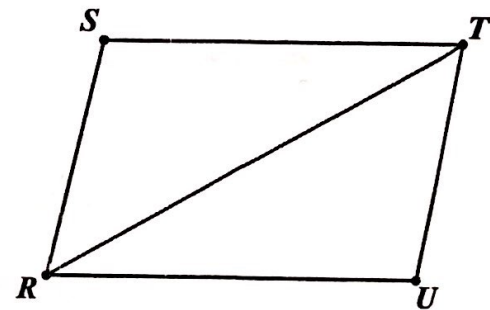
Given: $\angle N$ and $\angle Q$ are right angles; $\overline{NO} \cong \overline{PQ}$
 Prove: $\triangle ONP \cong \triangle PQO$



Statements	Reasons
1. $\angle N$ and $\angle Q$ are right angles	1.
2. $\triangle ONP$ and $\triangle PQO$ are _____ triangles	2. Def. of right triangle
3.	3. Reflexive Prop.
4. $\overline{NO} \cong \overline{PQ}$	4.
5.	5.

5.

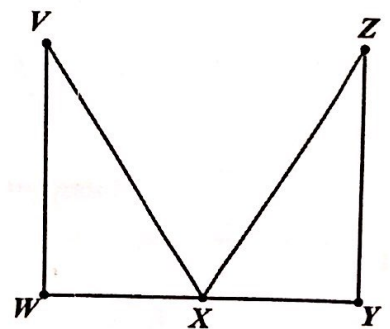
Given: $\overline{ST} \parallel \overline{RU}$; $\overline{SR} \parallel \overline{TU}$
 Prove: $\triangle SRT \cong \triangle UTR$



Statements	Reasons
1. $\overline{ST} \parallel \overline{RU}$	1.
2.	2. If lines \parallel , alt. int. \angle s \cong
3. $\overline{SR} \parallel \overline{TU}$	3.
4. $\angle SRT \cong \angle UTR$	4.
5.	5.
6.	6.

6.

Given: $\angle W$ and $\angle Y$ are right angles; $\overline{VX} \cong \overline{ZX}$; X is the midpoint of \overline{WY}
 Prove: $\triangle VWX \cong \triangle ZYX$



Statements	Reasons
1. $\angle W$ and $\angle Y$ are right angles	1.
2.	2. Def. of right triangle
3. $\overline{VX} \cong \overline{ZX}$; X is the midpoint of \overline{WY}	3.
4.	4. Def. of midpoint
5.	5.