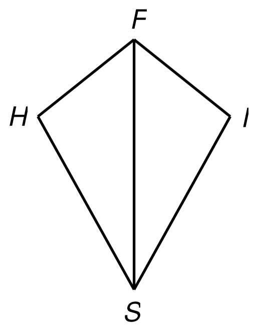
Lesson 4.7: Congruent Triangles Proofs Worksheet | Honors Geometry, Mr. Ferwerda | Name:________________

In problems 1-9, write complete proofs.

1. Given: $\overline{FH} \cong \overline{FI}$
$\overline{SH} \cong \overline{SI}$

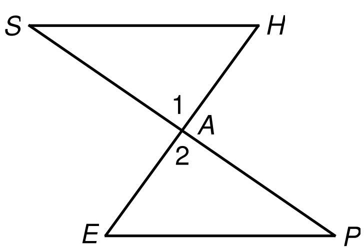
Prove: $\angle H \cong \angle I$



Conclusions	Justifications

2. Given: $\overline{SH} \cong \overline{PE}$
$\angle S \cong \angle P$

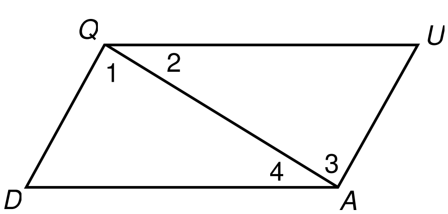
Prove: $\overline{SA} \cong \overline{PA}$



Conclusions	Justifications

3. Given: $\angle 1 \cong \angle 3$
$\angle 2 \cong \angle 4$

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

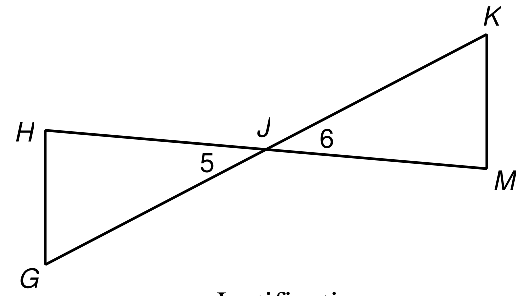


Conclusions	Justifications

4. Given: J is the midpoint of $\overline{HM}$

$\angle H \cong \angle M$

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

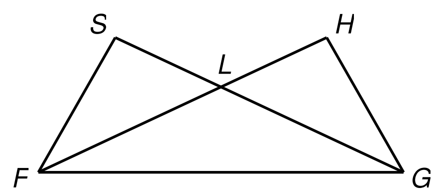


Conclusions	Justifications

5. Given: $\angle SFG \cong \angle HGF$

$\overline{FS} \cong \overline{GH}$

Prove: $\overline{FH} \cong \overline{GS}$



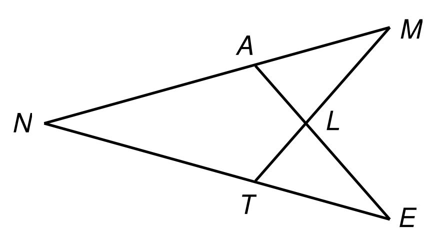
Hint: Look for two triangles that overlap and share a part.

Conclusions	Justifications

6. Given: $\overline{MN} \cong \overline{EN}$

$\overline{NT} \cong \overline{NA}$

Prove: $\angle M \cong \angle E$



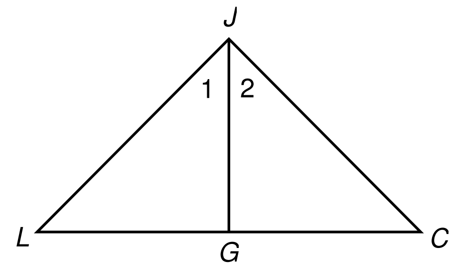
Hint: Look for two triangles that overlap and share a part.

Conclusions	Justifications

7. Given: ΔLJC is isosceles with vertex $\angle J$

$\angle 1 \cong \angle 2$

Prove: $\Delta LJG \cong \Delta CJG$



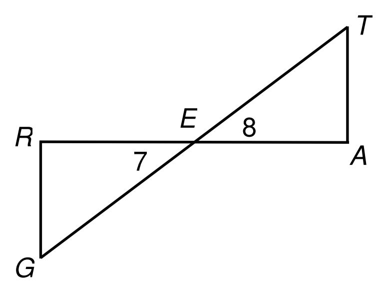
Conclusions	Justifications

8. Given: $\overline{GR} \perp \overline{RA}$

$\overline{TA} \perp \overline{RA}$

E is the midpoint of $\overline{RA}$

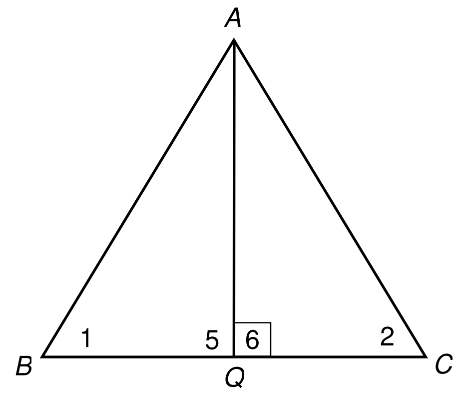
Prove: $\overline{GR} \cong \overline{TA}$



Conclusions	Justifications

9. Prove the ***Isosceles Triangle Converse Theorem***:

"*If a triangle has two congruent angles, then it is an isosceles triangle*."



Given: ΔABC
$\angle 1 \cong \angle 2$

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

Conclusions	Justifications
0. ΔABC; $\angle 1 \cong \angle 2$	0. Given
1. Construct $\overline{AQ} \perp \overline{BC}$	1. Through a point not on a line, there is exactly one line perpendicular to the given line