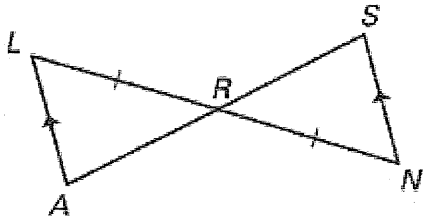
Unit 2A PROOFS – Clearly work through each proof.

Reason Bank: Corresponding angles Postulate, Reflexive Property of Congruence, Corresponding angles Postulate Converse, Transitive Property of Congruence, Congruent Angles, Alternate Interior Angles theorem, Exterior Angles Theorem, CPCTC (corresponding parts of congruent triangles are congruent) , SSS, SAS, HL, AAS, ASA,

1.

Given: $\overline{LA} \parallel \overline{SN}$, $\overline{LR} \cong \overline{NR}$

Prove: $\triangle LAR \cong \triangle NSR$



Statements	Reasons
1. $\overline{LA} \parallel \overline{SN}$	1. ?
2. $\angle L \cong \angle N$	2. ?
3. $\overline{LR} \cong \overline{NR}$	3. ?
4. $\angle LRA \cong \angle NRS$	4. ?
5. $\triangle LAR \cong \triangle NSR$	5. ?

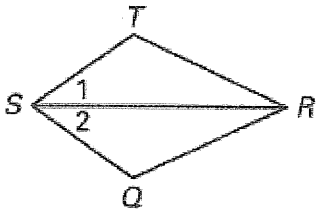
2.

. Write a two-column proof.

Given: $\overrightarrow{SR}$ bisects $\angle TSQ$,

$\angle T \cong \angle Q$

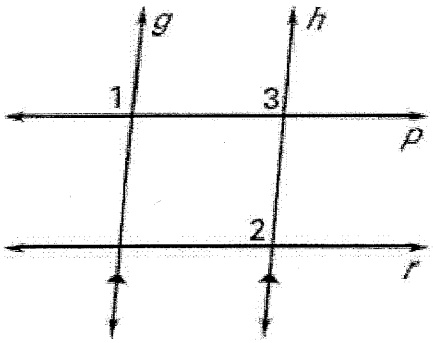
Prove: $\triangle RTS \cong \triangle RQS$



Statements	Reasons
1. _____	1. _____
2. _____	2. _____
3. _____	3. _____
4. _____	4. _____
5. _____	5. _____

3. Complete the following proof with reasons from the reason bank.

Reason Bank: Corresponding angles Postulate, Reflexive Property of Congruence, Corresponding angles Postulate Converse, Transitive Property of Congruence, Congruent Angles, Alternate Interior Angles theorem, Exterior Angles Theorem, CPCTC (corresponding parts of congruent triangles are congruent) , SSS, SAS, HL, AAS, ASA,

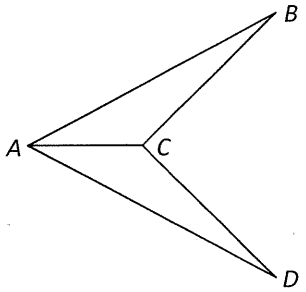


3. **GIVEN:** $g \parallel h$, $\angle 1 \cong \angle 2$
PROVE: $p \parallel r$

Statements	Reasons
1. $g \parallel h$, $\angle 1 \cong \angle 2$	1.
2. $\angle 1 \cong \angle 3$	2.
3. $\angle 2 \cong \angle 3$	3.
4. $p \parallel r$	4.

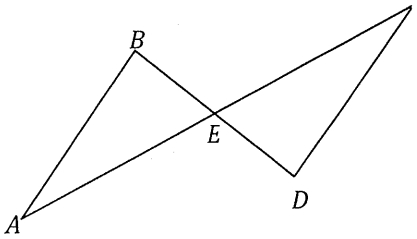
4) Given: $\overline{AB} \cong \overline{AD}, \overline{BC} \cong \overline{DC}$
Prove: $\Delta ABC \cong \Delta ADC$

Statements	Reasons
1. $\overline{AB} \cong \overline{AD}, \overline{BC} \cong \overline{DC}$	1. Given
2.	2.
3. $\Delta ABC \cong \Delta ADC$	3.



5) Given: $\overline{AB} \cong \overline{CD}, \angle A \cong \angle C$
Prove: $\overline{BE} \cong \overline{DE}$

Statements	Reasons
1. $\overline{AB} \cong \overline{CD}, \angle A \cong \angle C$	1. Given
2.	2.
3. $\Delta ABE \cong \Delta CDE$	3.
4. $\overline{BE} \cong \overline{DE}$	4.



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Reason Bank: Corresponding angles Postulate, Reflexive Property of Congruence, Corresponding angles Postulate Converse, Transitive Property of Congruence, Congruent Angles, Alternate Interior Angles theorem, Exterior Angles Theorem, CPCTC (corresponding parts of congruent triangles are congruent) , SSS, SAS, HL, AAS, ASA, Given , vertical angles $\cong$, substitution

1.

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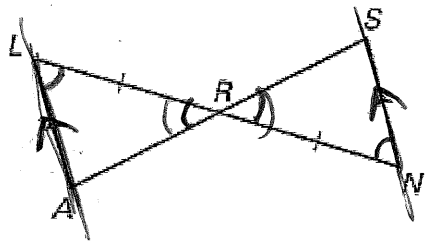
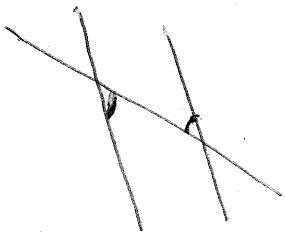
Prove: $\triangle LAR \cong \triangle NSR$



Statements	Reasons
1. $\overline{LA} \parallel \overline{SN}$	1. Given
2. $\angle L \cong \angle N$	2. Alt. Interior Angle theorem
3. $\overline{LR} \cong \overline{NR}$	3. Given
4. $\angle LRA \cong \angle NRS$	4. vertical angles $\cong$
5. $\triangle LAR \cong \triangle NSR$	5. ASA

2.



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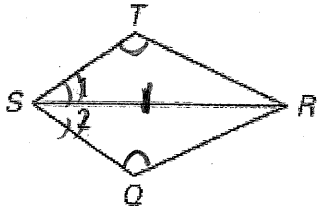

Statements	Reasons
1. $\overrightarrow{SR}$ bisects $\angle TSQ$	1. Given
2. $\angle T \cong \angle Q$	2. Given
3. $\angle 1 \cong \angle 2$	3. Def. of Angle bisector
4. $\overline{SR} \cong \overline{SR}$	4. Reflexive property of congruence
5. $\triangle RTS \cong \triangle RQS$	5. AAS

3. Complete the following proof with reasons from the reason bank.

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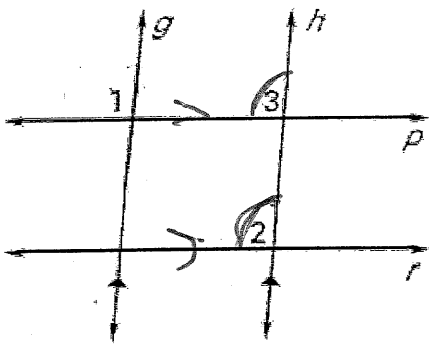
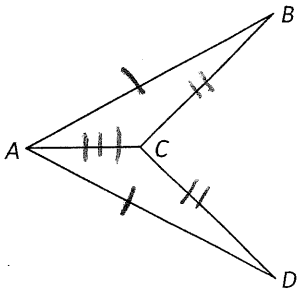


3. **GIVEN:** $g \parallel h$, $\angle 1 \cong \angle 2$
PROVE: $p \parallel r$

Statements	Reasons
1. $g \parallel h$, $\angle 1 \cong \angle 2$	1. Given
2. $\angle 1 \cong \angle 3$	2. corresponding angle $\cong$
3. $\angle 2 \cong \angle 3$	3. Substitution or transitive
4. $p \parallel r$	4. corresp. angles $\cong$ converse

4) Given: $\overline{AB} \cong \overline{AD}, \overline{BC} \cong \overline{DC}$
Prove: $\Delta ABC \cong \Delta ADC$

Statements	Reasons
1. $\overline{AB} \cong \overline{AD}, \overline{BC} \cong \overline{DC}$	1. Given
2. $\overline{AC} \cong \overline{AC}$	2. Reflexive property
3. $\Delta ABC \cong \Delta ADC$	3. SSS



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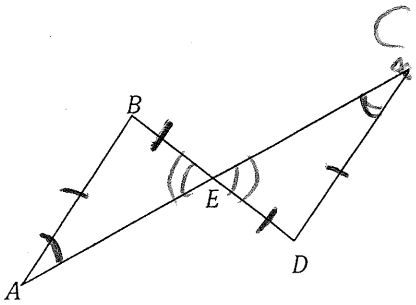
Statements	Reasons
1. $\overline{AB} \cong \overline{CD}, \angle A \cong \angle C$	1. Given
2. $\angle AEB \cong \angle CED$	2. vertical angles $\cong$
3. $\Delta ABE \cong \Delta CDE$	3. AAS
4. $\overline{BE} \cong \overline{DE}$	4. CPCTC