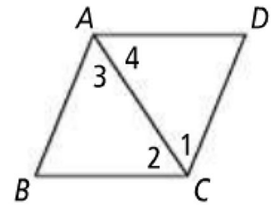
23. Prove Theorem 6-17.

Proof

Given: *ABCD* is a parallelogram.

$\overline{AC}$ bisects $\angle BAD$ and $\angle BCD$.

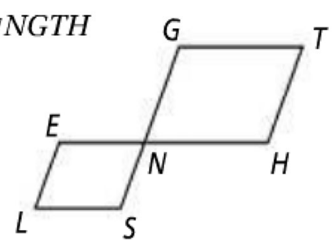
Prove: *ABCD* is a rhombus.



Statements	Reasons
1. *ABCD* is a parallelogram. $\overline{AC}$ bisects $\angle BAD$ and $\angle BCD$.	1. Given
2. $\angle 1 \cong \angle 2$, $\angle 3 \cong \angle 4$	2. Definition of angle bisector.
3. $\overline{AC} \cong \overline{AC}$	3. Reflexive property
4. $\Delta ABC \cong \Delta ADC$	4. ASA Post.
5. $\overline{AB} \cong \overline{AD}$, $\overline{BC} \cong \overline{DC}$	5. CPCTC
6. $\overline{AB} \cong \overline{CD}$, $\overline{BC} \cong \overline{AD}$	6. Opp. sides of a ▱ are $\cong$
7. $\overline{AB} \cong \overline{AD} \cong \overline{BC} \cong \overline{CD}$	7. Transitive prop. of $\cong$
8. ABCD is a rhombus	8. Definition of a rhombus

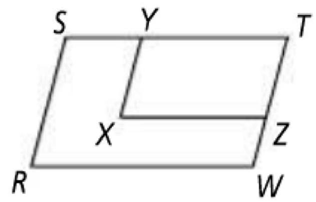
34. Given: ▱*LENS* and ▱*NGTH*

Prove: $\overline{LS} \parallel \overline{GT}$



Statements	Reasons
1. ▱*LENS* and ▱*NGTH*	1. Given
2. $\overline{LS} \parallel \overline{EN}$ *and* $\overline{NH} \parallel \overline{GT}$	2. Definition of a parallelogram
3. $\overline{LS} \parallel \overline{GT}$	3. If two lines are || to the same line, then they are || to each other.

Use the diagram at the right for each proof.



Proof

36. Given: ▱$RSTW$ and ▱$XYTZ$

Prove: $\angle R \cong \angle X$

Statements	Reasons
1. ▱$RSTW$ and ▱$XYTZ$	1. Given
2. $\angle R \cong \angle T$ and $\angle T \cong \angle X$	2. Opp. $\angle$s of a ▱ are $\cong$
3. $\angle R \cong \angle X$	3. Transitive prop. of $\cong$