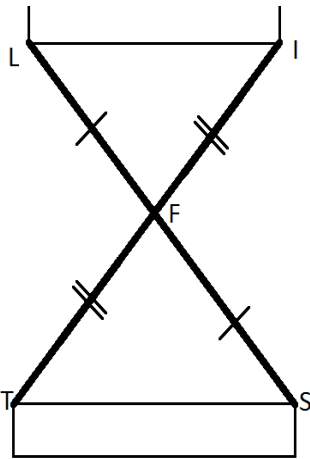


SCISSOR LIFT PARALLEL PROOF SOLUTION



Given F is the midpoint of LS and IT

Prove $\overline{LI} \parallel \overline{TS}$

General Reasoning

Since F is the midpoint of both segments, we have two sets of congruent sides for the two triangles. The vertical angles create a pair of congruent angles. Since these angles are between the two sets of parallel sides, the two triangles are congruent by SAS. That means $\angle S$ is congruent to $\angle L$. These are alternate interior angles. Since they are congruent, that means $\overline{LI} \parallel \overline{ST}$.

STATEMENT	REASON
1. F is the midpoint of LS and IT	1. Given
2. $LF = FS$ and $TF = FI$	2. Definition of midpoint
3. $LF \cong FS$ and $TF \cong FI$	3. Definition of congruent segments
4. $\angle LFI \cong \angle SFT$	4. Vertical angles are congruent
5. $\triangle LFI \cong \triangle SFT$	5. Side angle side theorem for proving congruent triangles
6. $\angle ILF \cong \angle TSF$	6. Corresponding parts of congruent triangles are congruent.
7. $\overline{LI} \parallel \overline{ST}$	7. If alternate interior angles are congruent, then the lines are parallel.