

3-5 Enrichment**Scrambled-Up Proof**

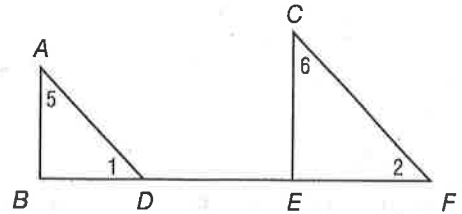
The reasons necessary to complete the following proof are scrambled up below. To complete the proof, number the reasons to match the corresponding statements.

Given: $\angle 1$ and $\angle 5$ are complementary.

$\angle 2$ and $\angle 6$ are complementary.

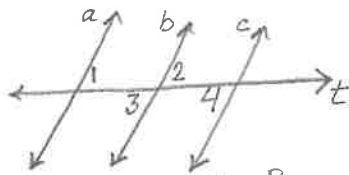
$\angle 5 \cong \angle 6$

Prove: $\overline{AD} \parallel \overline{CF}$



Statements	Reasons
1. $\angle 1$ and $\angle 5$ are complementary.	_____ Converse of Corresponding Angles Theorem
2. $\angle 2$ and $\angle 6$ are complementary.	_____ Given
3. $\angle 5 \cong \angle 6$	_____ Angles complementary to congruent angles are congruent.
4. $\angle 1 \cong \angle 2$	_____ Given
5. $\angle 1$ and $\angle 2$ are corresponding angles for lines \overline{AD} and \overline{CF} .	_____ Segments contained in parallel lines are parallel.
6. $\overline{AD} \parallel \overline{CF}$	_____ Definition of corresponding angles
7. $\overline{AD} \parallel \overline{CF}$	_____ Given

Given: $a \parallel b$; $b \parallel c$
Prove: $a \parallel c$



Statements	Reasons
1. $a \parallel b$ and $b \parallel c$	_____ Vert. \angle s are \cong
2. $\angle 1 \cong \angle 3$	_____ Trans. Prop.
3. $\angle 3 \cong \angle 2$	_____ Given
4. $\angle 2 \cong \angle 4$	_____ Alt. Int. \angle s Converse Thm.
5. $\angle 1 \cong \angle 4$	_____ Alt. Int. \angle s Thm.
6. $a \parallel c$	_____ Alt. Int. \angle s Thm.