

**LESSON** **2-7** **Problem Solving**  
**Flowchart and Paragraph Proofs**

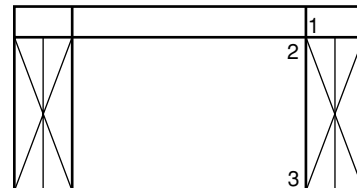
The diagram shows the second-floor glass railing at a mall.

1. Use the given two-column proof to write a flowchart proof.

**Given:**  $\angle 2$  and  $\angle 3$  are supplementary.

**Prove:**  $\angle 1$  and  $\angle 3$  are supplementary.

**Two-Column Proof:**



Statements	Reasons
1. $\angle 2$ and $\angle 3$ are supplementary.	1. Given
2. $m\angle 2 + m\angle 3 = 180^\circ$	2. Def. of supp. $\sphericalangle$
3. $\angle 2 \cong \angle 1$	3. Vert. $\sphericalangle$ Thm.
4. $m\angle 2 = m\angle 1$	4. Def. of $\cong \sphericalangle$
5. $m\angle 1 + m\angle 3 = 180^\circ$	5. Subst.
6. $\angle 1$ and $\angle 3$ are supplementary.	6. Def. of supp. $\sphericalangle$

**Choose the best answer.**

2. Which would NOT be included in a paragraph proof of the two-column proof above?
- A Since  $\angle 2$  and  $\angle 3$  are supplementary,  $m\angle 2 = m\angle 3$ .
  - B  $\angle 2 \cong \angle 1$  by the Vertical Angles Theorem.
  - C Using substitution,  $m\angle 1 + m\angle 3 = 180^\circ$ .
  - D  $m\angle 2 = m\angle 1$  by the definition of congruent angles.