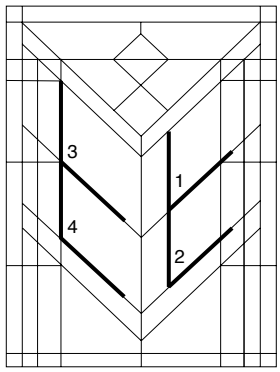
Name _____ Date _____ Class _____

LESSON 2-6

Problem Solving

Geometric Proof

1. Refer to the diagram of the stained-glass window and use the given plan to write a two-column proof.

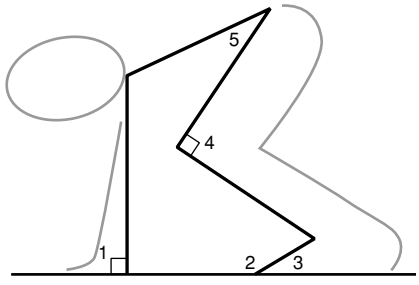


Given: $\angle 1$ and $\angle 3$ are supplementary.
$\angle 2$ and $\angle 4$ are supplementary.
$\angle 3 \cong \angle 4$

Prove: $\angle 1 \cong \angle 2$

Plan: Use the definition of supplementary angles to write the given information in terms of angle measures. Then use the Substitution Property of Equality and the Subtraction Property of Equality to conclude that $\angle 1 \cong \angle 2$.

The position of a sprinter at the starting blocks is shown in the diagram. Which statement can be proved using the given information? Choose the best answer.



2. Given: $\angle 1$ and $\angle 4$ are right angles.

A $\angle 3 \cong \angle 5$ **C** $m\angle 1 + m\angle 4 = 90°$

B $\angle 1 \cong \angle 4$ **D** $m\angle 3 + m\angle 5 = 180°$

3. Given: $\angle 2$ and $\angle 3$ are supplementary.
$\angle 2$ and $\angle 5$ are supplementary.

F $\angle 3 \cong \angle 5$ **H** $\angle 3$ and $\angle 5$ are complementary.

G $\angle 2 \cong \angle 5$ **J** $\angle 1$ and $\angle 2$ are supplementary.