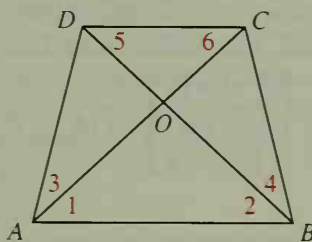


# Flow Proofs

Proofs can be written in a variety of forms, including: (1) two-column form, (2) paragraph form, and (3) flow form. In a *flow proof*, a diagram with implication arrows ( $\rightarrow$ ) shows the logical flow of the statements of a proof. The statements in the diagram are numbered and the reasons for each are given below the flow diagram.

**Example 1** Given:  $\angle 1 \cong \angle 2$ ;  
 $\angle 3 \cong \angle 4$   
 Prove:  $\angle 5 \cong \angle 6$



**Flow Proof:**

1.  $\angle 1 \cong \angle 2 \rightarrow$  2.  $\overline{AO} \cong \overline{BO}$   
 3.  $\angle 3 \cong \angle 4$   
 4.  $\angle AOD \cong \angle BOC$  }  $\rightarrow$  5.  $\triangle AOD \cong \triangle BOC$   
 6.  $\overline{DO} \cong \overline{CO} \rightarrow$  7.  $\angle 5 \cong \angle 6$

**Reasons**

1. Given
2. If 2  $\angle$  of a  $\triangle$  are  $\cong$ , the sides opp. them are  $\cong$ .
3. Given
4. Vertical  $\angle$  are  $\cong$ .
5. ASA Postulate
6. Corr. parts of  $\cong \triangle$  are  $\cong$ .
7. Isosceles  $\triangle$  Theorem

Because this flow proof is long, we have drawn an arrow connecting steps 5 and 6 to show that the proof continues below. You can do this or turn your paper sideways to accommodate a long proof.

One advantage of flow proof is that it shows clearly which steps depend on other steps. In the example above, for instance, we see that step 5 (whose justification is ASA) depends on steps 2, 3, and 4, each of which provides one of the three congruences needed for ASA. The next example shows how a complex proof can be understood more easily by organizing it into a flow proof.