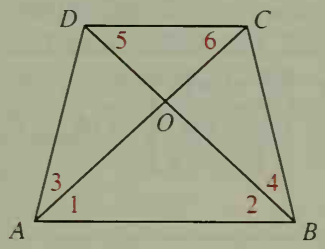
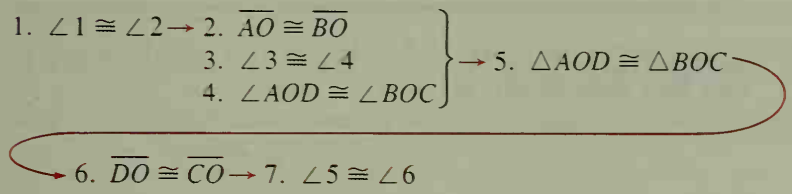
Flow Proofs

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 (→) 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:



Reasons

1. Given
2. If 2 ∡ of a △ are ≅, the sides opp. them are ≅.
3. Given
4. Vertical ∡ are ≅.
5. ASA Postulate
6. Corr. parts of ≅ △ are ≅.
7. Isosceles △ 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.