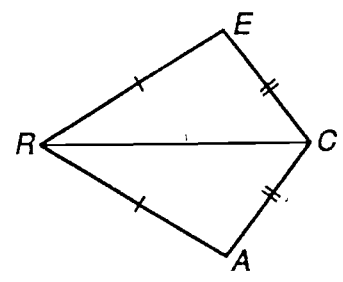


You will use flowcharts to demonstrate that what you have discovered through inductive reasoning is logically true. Flowcharts can make your logical thinking visible and help others to follow your reasoning. The example below is a flowchart showing a logical argument for Exercise 5.5 A1. A logical argument presented in the form of a flowchart is called a **flowchart proof**.

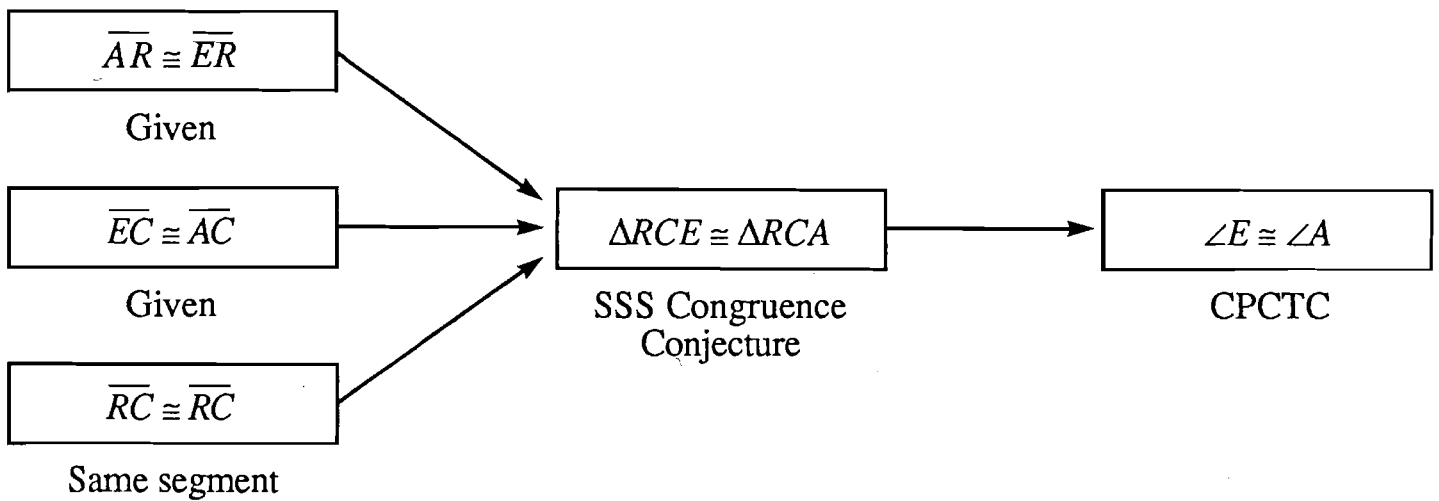
**Example**

Given:  $\overline{AR} \cong \overline{ER}$   
 $\overline{EC} \cong \overline{AC}$

Show:  $\angle E \cong \angle A$



*Flowchart Proof:*



In the example above, you saw that the logical argument flows according to the arrows from the information that you are given to the conclusion you are trying to demonstrate. The logical reason supporting each statement is written beneath its box.

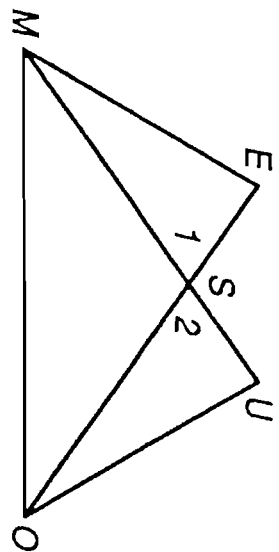
Copy the flowchart. Provide each missing reason or statement in the proof.

Given:  $\overline{SE} \cong \overline{SU}$

$\angle E \cong \angle U$

Show:  $\overline{MS} \cong \overline{SO}$

Flowchart Proof:



1.  $\overline{SE} \cong \overline{SU}$

2.  $\angle E \cong \angle U$

3.  $\angle 1 \cong \angle 2$

4.  $\triangle MEO \cong \triangle UEO$   
ASA Congruence Conjecture

5.  $\overline{MS} \cong \overline{SO}$

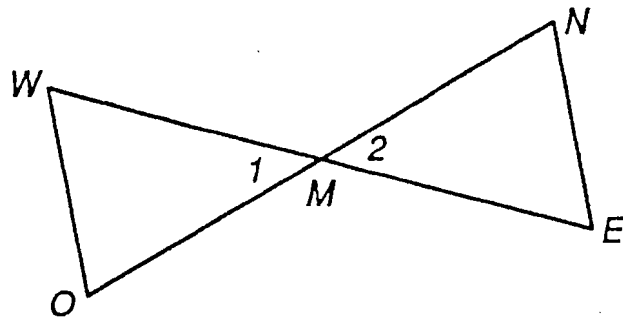
3.

5.

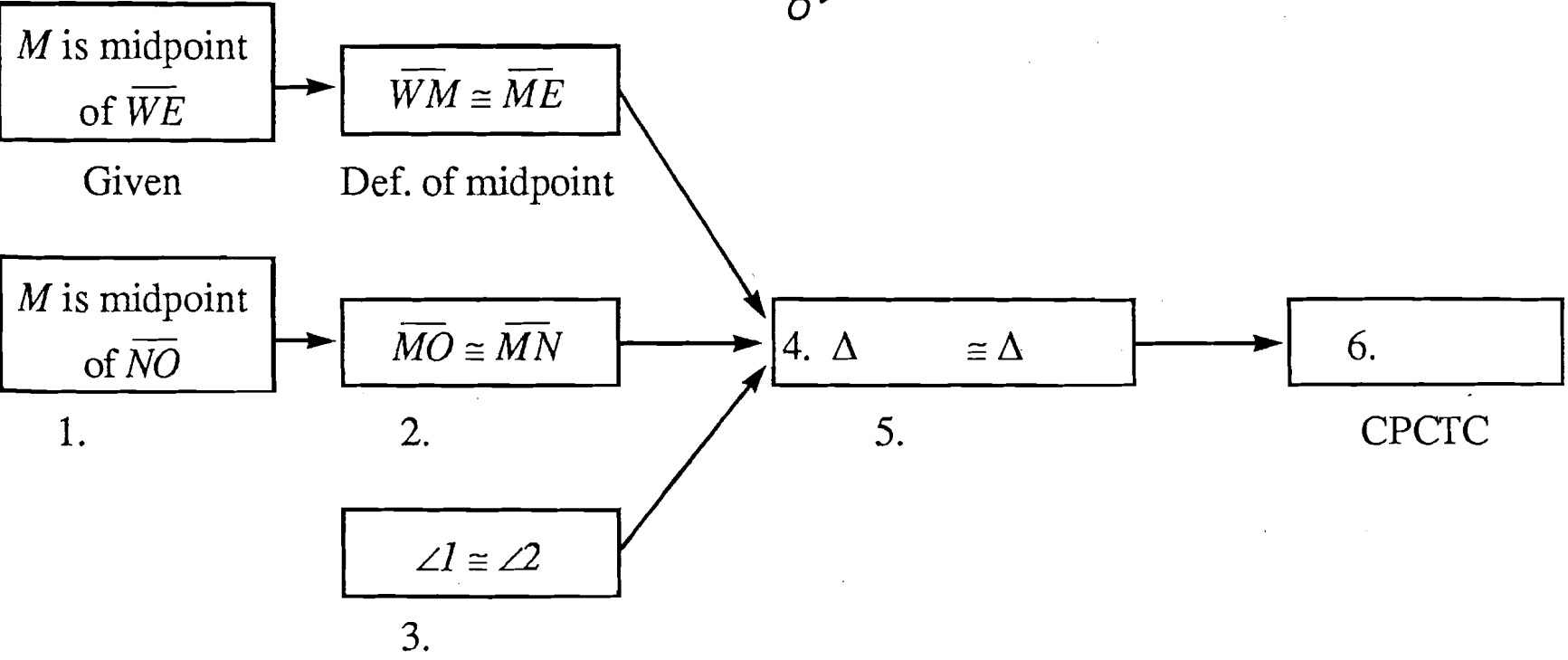
Copy the flowchart. Provide each missing reason or statement in the proof.

Given:  $M$  is the midpoint of  $\overline{WE}$   
 $M$  is the midpoint of  $\overline{NO}$

Show:  $\overline{WO} \cong \overline{EN}$



Flowchart Proof:

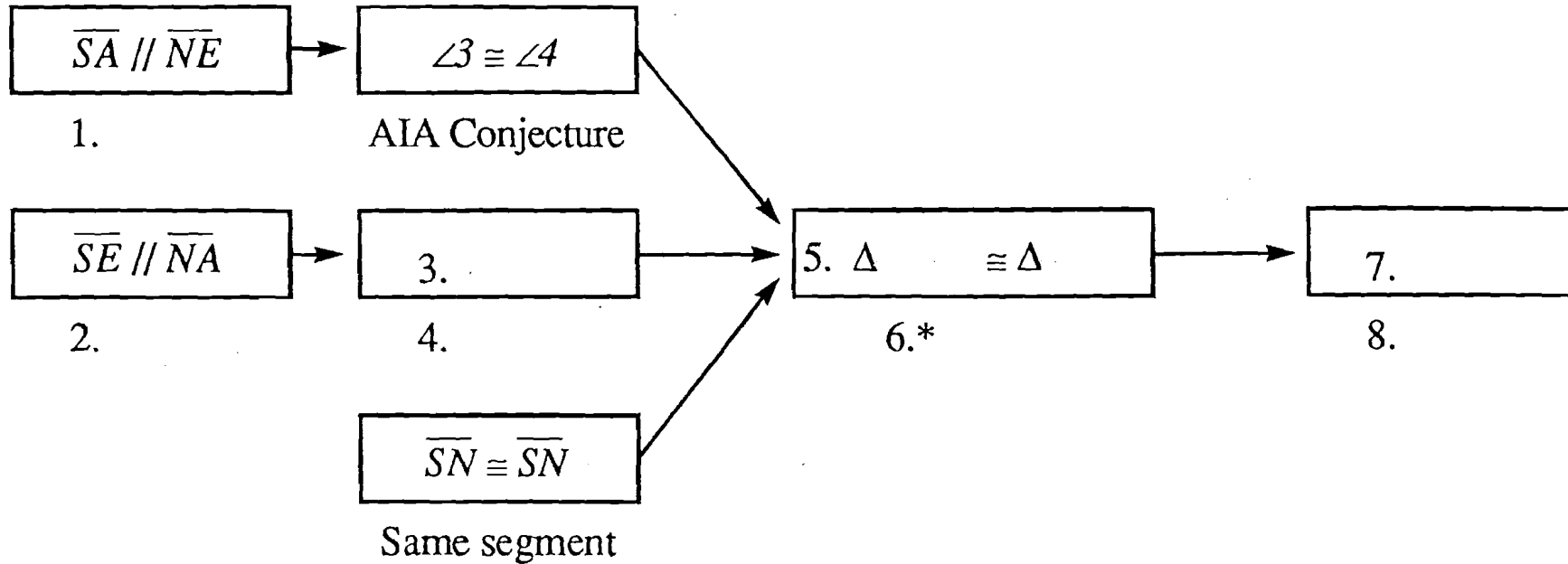
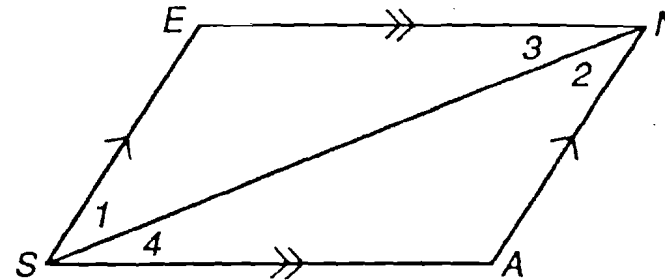


Complete the flowchart proof below to logically demonstrate the argument. There is always more than one flowchart proof that can be written for a logical argument. One possible proof for this argument has been started for you.

Given:  $\overline{SA} \parallel \overline{NE}$   
 $\overline{SE} \parallel \overline{NA}$

Show:  $\overline{SA} \cong \overline{NE}$

Flowchart Proof:



1.\* Now it's your turn. Write a flowchart proof to demonstrate the argument below. Writing a proof can be difficult. You may find it very helpful to work with others on the proof, sharing your ideas.

*Given:*       $\angle S \cong \angle T$   
                  $\angle R \cong \angle A$   
                  $\overline{RE} \cong \overline{AE}$

*Show:*         $\overline{RT} \cong \overline{SA}$

