

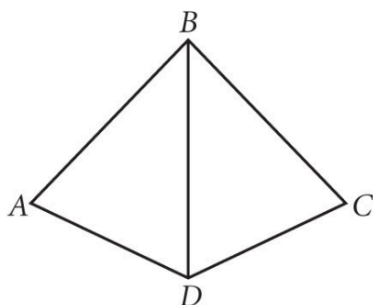
# Geometry HW 10/10, due 10/14

## Developing Proof Using Triangle Conjectures

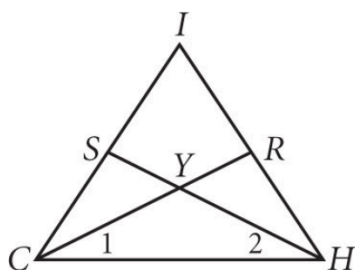
### 4.6 #1,3 (p.240) and 4.7 #1-5 (p.245-246)

**DEVELOPING PROOF** For Exercises 1 and 3, copy the figures onto your paper and mark them with the given information. Answer the question about segment or angle congruence. If your answer is yes, write a paragraph proof explaining why. Remember to use your reasoning strategies, especially apply previous conjectures (You can use the Conjecture List from the website) and add an auxiliary line if necessary. If there is not enough information to prove congruence, write "cannot be determined;" otherwise state which congruence shortcut you used.

1.  $\angle A \cong \angle C$ ,  $\angle ABD \cong \angle CBD$  Is  $\overline{AB} \cong \overline{CB}$ ? (h)



3.  $\overline{CS} \cong \overline{HR}$ ,  $\angle 1 \cong \angle 2$   
Is  $\overline{CR} \cong \overline{HS}$ ?



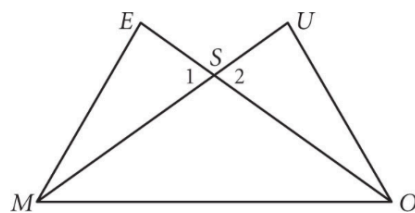
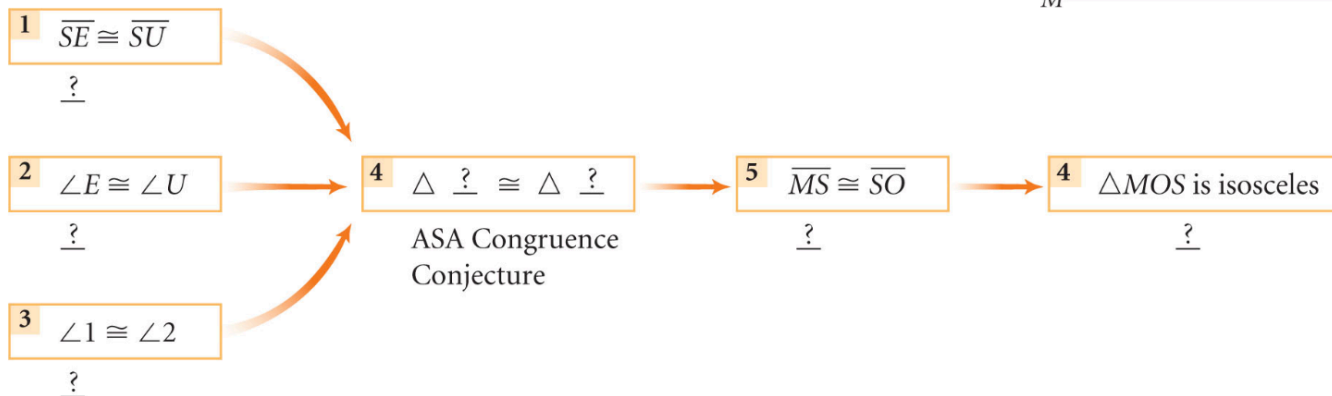
Please rewrite the flowcharts on a separate sheet of paper to help solidify your understanding. In some cases, an auxiliary line has been added to help with the proof.

1. **DEVELOPING PROOF** Copy the flowchart. Provide each missing reason or statement in the proof.

**Given:**  $SE \cong SU$   
 $\angle E \cong \angle U$

**Show:**  $\triangle MOS$  is isosceles

**Flowchart Proof**

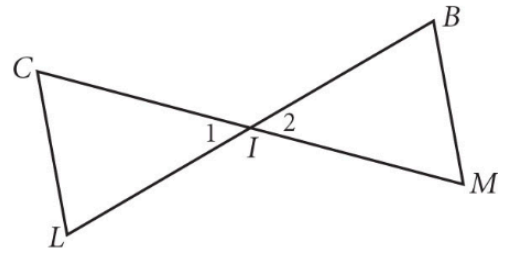
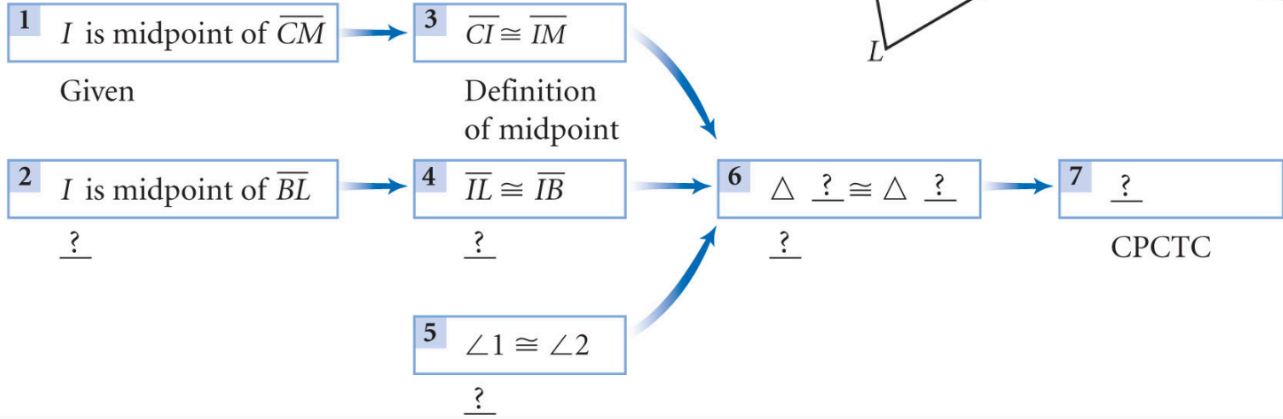


**2. DEVELOPING PROOF** Copy the flowchart. Provide each missing reason or statement in the proof.

**Given:**  $I$  is the midpoint of  $\overline{CM}$   
 $I$  is the midpoint of  $\overline{BL}$

**Show:**  $\overline{CL} \cong \overline{MB}$

**Flowchart Proof**

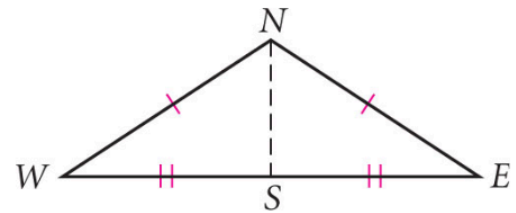
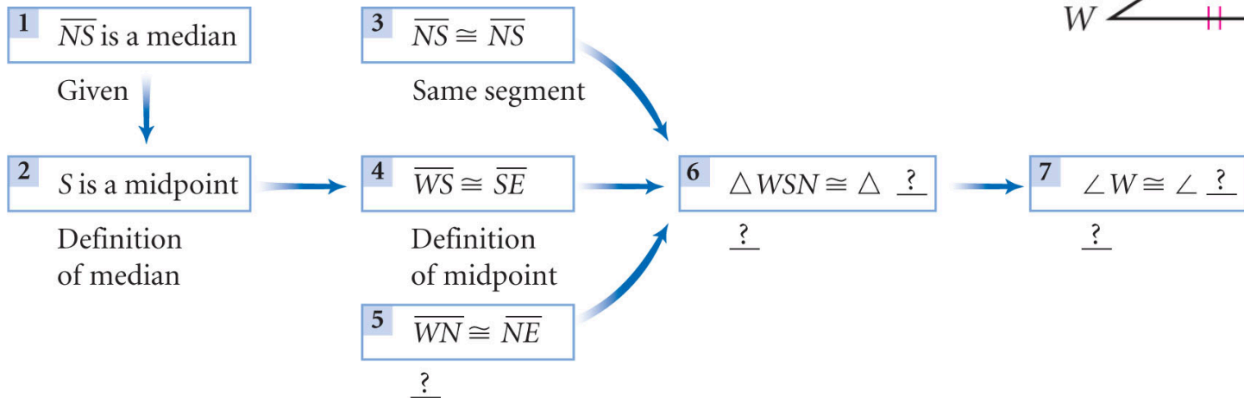


**3. Complete this flowchart proof of the Isosceles Triangle Conjecture.** Given that the triangle is isosceles, show that the base angles are congruent.

**Given:**  $\triangle NEW$  is isosceles, with  $\overline{WN} \cong \overline{EN}$  and median  $\overline{NS}$

**Show:**  $\angle W \cong \angle E$

**Flowchart Proof**

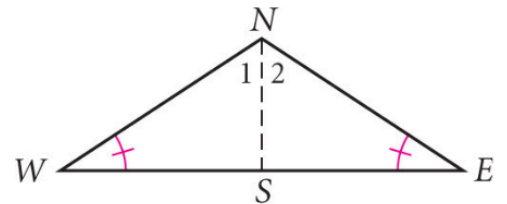
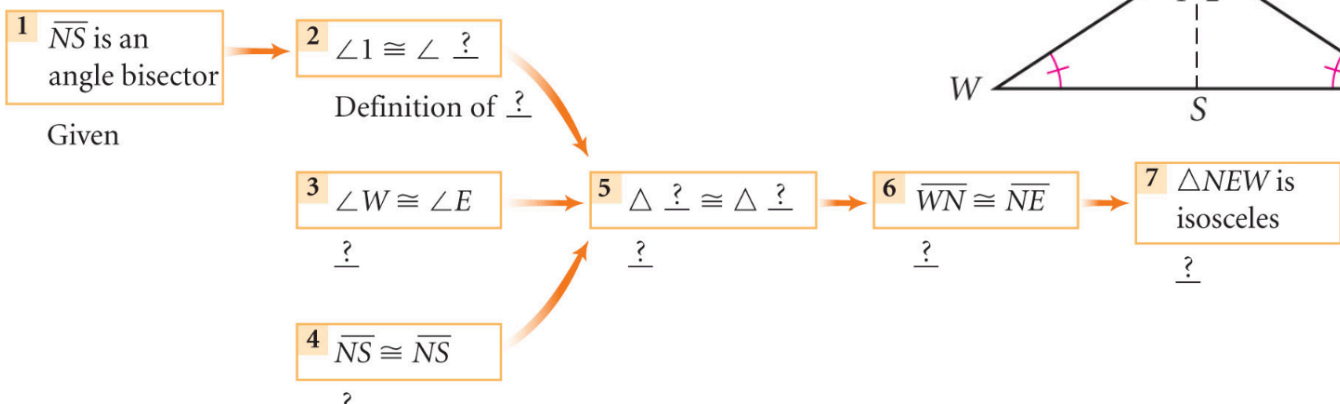


**4. Complete this flowchart proof of the Converse of the Isosceles Triangle Conjecture.**

**Given:**  $\triangle NEW$  with  $\angle W \cong \angle E$   
 $\overline{NS}$  is an angle bisector

**Show:**  $\triangle NEW$  is an isosceles triangle

**Flowchart Proof**



5. Complete the flowchart proof. What does this proof tell you about parallelograms?

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

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

**Flowchart Proof**

