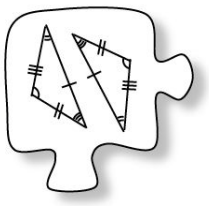
2.1.1 & 2.1.2 -- I can identify pairs of triangles as congruent, write a congruence statement, and use flowcharts or two-column proofs.

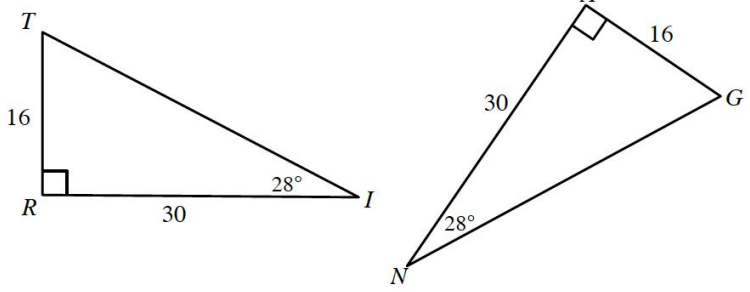
2.1.1 What information do I need?



Triangle Congruence Theorems

2-1

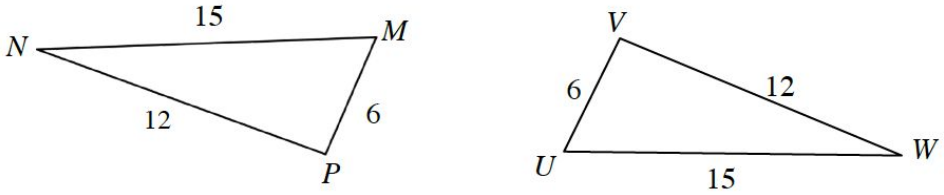
a). Verify that all side lengths and corresponding angle measures of the two triangles are equal.



b). What is a sequence of rigid transformations that maps the triangle on the left to the triangle on the right?

c). Write a congruence statement for the two triangles.

2-2



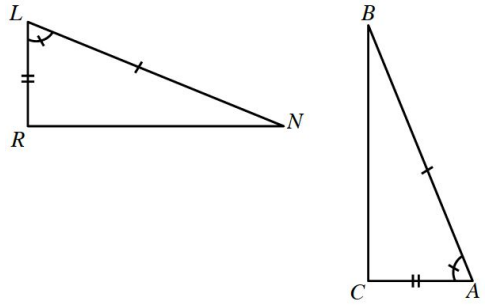
a). Finish the congruence statement for the two triangles. (Tip: The triangles are not oriented the same way.)

△MNP ≅ △UWV;

b). What sequence of rigid transformations would map the triangle on the left to the triangle on the right?

2-3

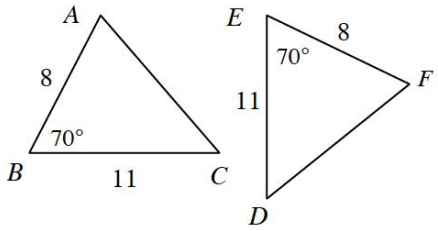
Are the following triangles congruent? If so, write a congruence statement explaining how you know, and justify your answer.



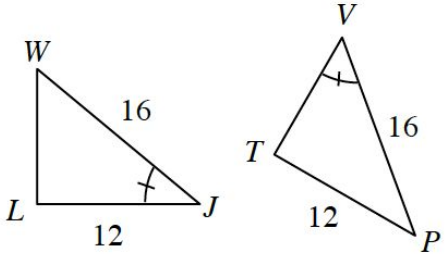
2-4

Determine if the following pairs of triangles are congruent. If they are, justify your answer with a congruence statement, and describe a sequence of rigid transformations that would map one triangle onto the other.

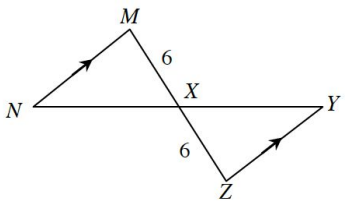
a)



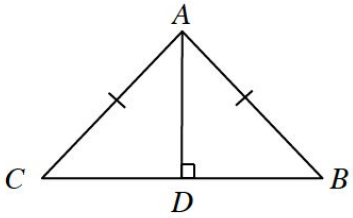
b).



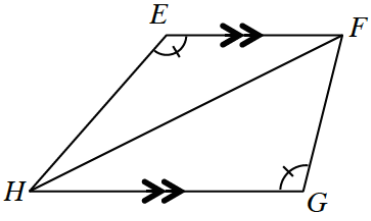
c).



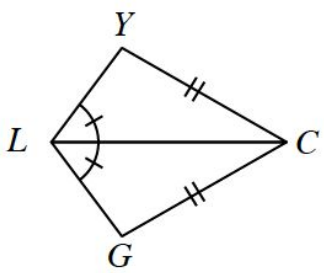
d).



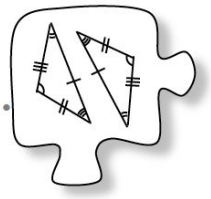
e).



f).



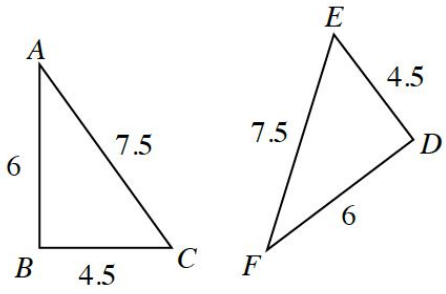
2.1.2 How can I organize my thinking?



Flowcharts for Congruence

2-12

Examine the two triangles.

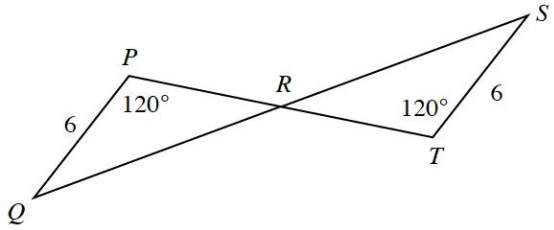


a. Are they congruent? If so, which triangle congruence theorem ensures that these triangles are congruent?

b. Make a flowchart showing your argument that these triangles are congruent.

2-13

Make a flowchart or two-column proof showing that the triangles at left are congruent.



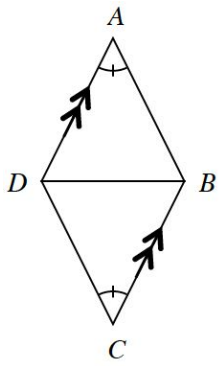
2-14

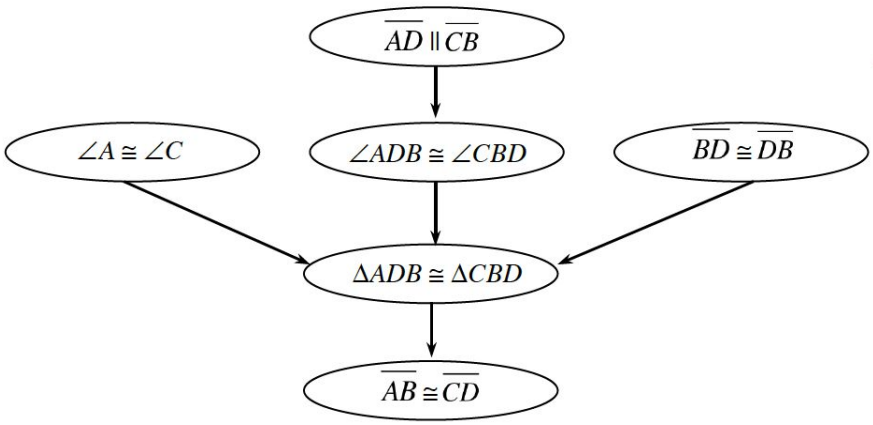
Suppose you are working on a problem involving the two triangles ΔUVW and ΔXYZ, and you know that $\Delta UVW \cong \Delta XYZ$. What can you conclude about the sides and angles of ΔUVW and ΔXYZ? Write down *every* congruence statement involving sides or angles that must be true.

Side Lengths: Angle Measures:

2-15

Based on the diagram, complete the following flowchart by writing justifications for each step.



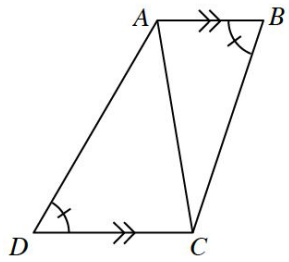


Statements:	**Reasons:**
1. $\overline{AD} \parallel \overline{CB}$	1. Given
2. $\angle A \cong \angle C$	2. Given
3. $\angle ADB \cong \angle CBD$	3. .
4.	4. Same side / Shared Side. Reflexive Property of Congruence
5. $\Delta ADB \cong \Delta CBD$	5.
6.	6. Congruent triangles have congruent parts.

2-16

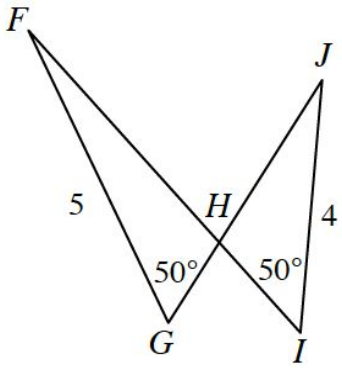
In each diagram below, determine whether the triangles are congruent or not. If you claim the triangles are congruent, make a flowchart or two-column proof justifying your answer.

a).



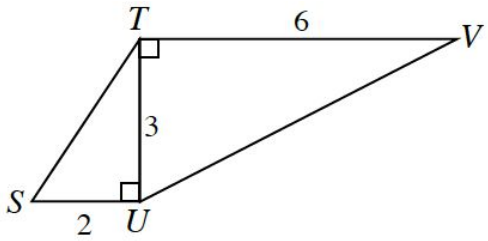
a).

b).



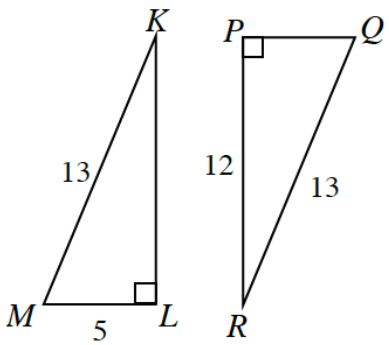
b).

c).



c).

d).



d).