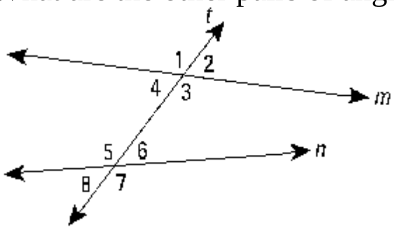
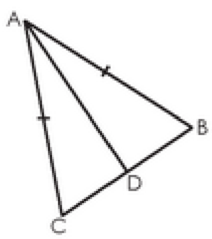
Objectives:
To prove triangles are congruent and to use CPCTC to prove that corresponding parts of congruent triangles are congruent

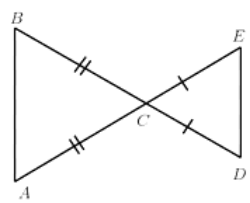
Review:
What do you call angles 1 and 5 below, and why? ____
What are the other pairs of angles that have that same characteristic? ______________________________

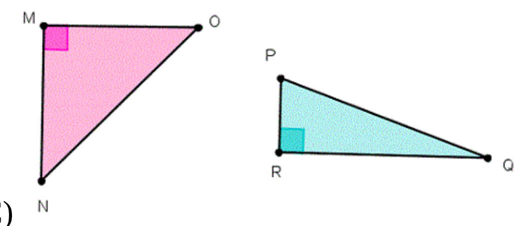


The word ___________________ means “able to be matched”; or, in our case, “matching”. If we were to lay angle 1 on top of angle 5, they would match in location. We can do something similar with triangles, as, just like the angles above, we have corresponding parts in triangles.

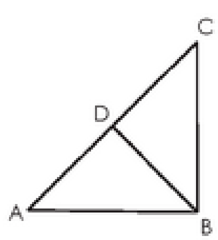
Example 1: Name the corresponding angles and sides of the triangles below:

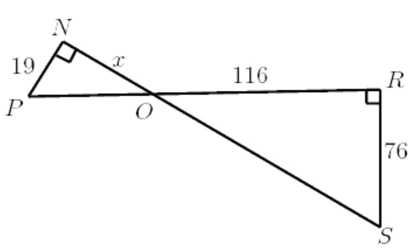
A) 

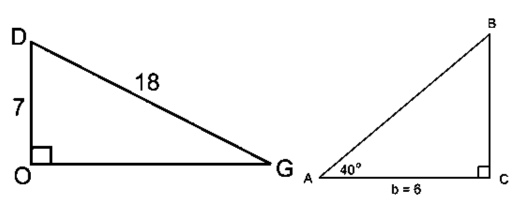
B) 

C) 

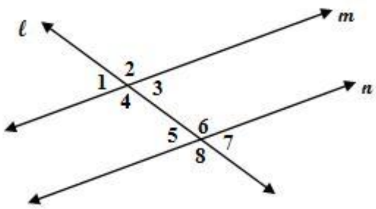
Practice 1: Name the corresponding angles and sides of the triangles below:

A) 

B) 

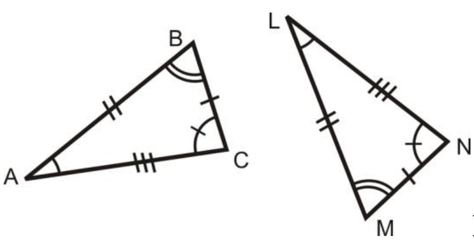
C) 

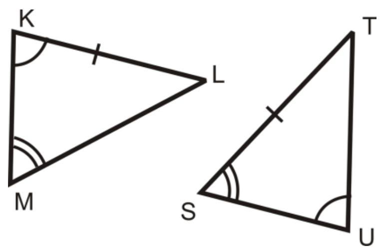
What happens when the corresponding angles are formed by a pair of parallel lines cut by a transversal?

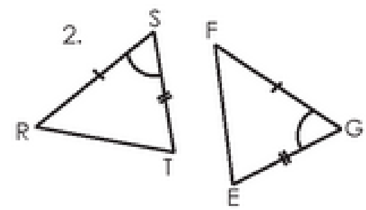


Because angles 1 and 5 have the same size and shape, they are ___________________.

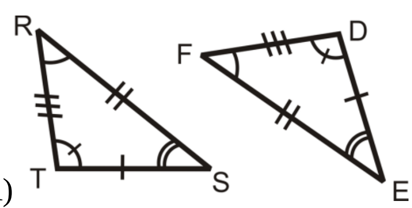
Example 2: List the corresponding angles and sides of the following pairs of congruent triangles:

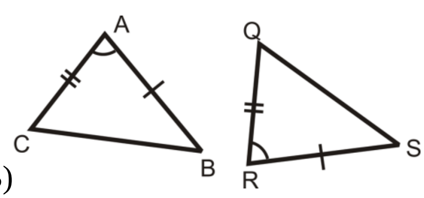
A) 

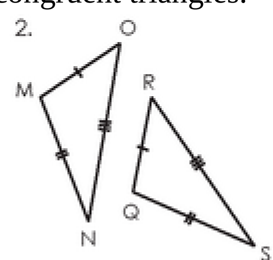
B) 

C) 

Practice 2: List the corresponding angles and sides of the following pairs of congruent triangles.

A) 

B) 

C) 

So, what happens when the corresponding parts belong to congruent triangles?

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Remember that, when we have two congruent triangles, we can identify the corresponding parts just by looking at the congruence statement.

Example 3: List the corresponding congruent parts of the congruent triangles below:

A) $\Delta RAT \cong \Delta PIG$ B) $\Delta LBC \cong \Delta BYU$

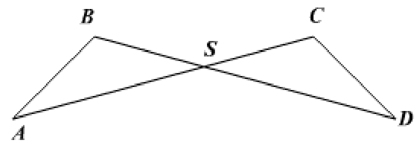
Practice 3: List the corresponding congruent parts of the congruent triangles below:

A) $\Delta USC \cong \Delta MIT$ B) $\Delta HOT \cong \Delta SIP$

What we have been using is a theorem abbreviated as ______________________, which stands for ____. In order for us to be able to use this theorem, we first have to prove that the pair of triangles involved in the theorem are ___________________.

Recall: What are the five triangle congruence postulates? ____

Example 4: Complete the proof below:

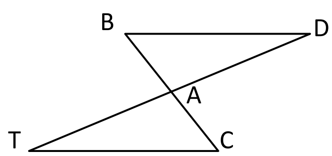


Given: $\overline{SA} \cong \overline{SD}$, $\overline{SB} \cong \overline{SC}$

Prove: $\angle A \cong \angle D$

$\overline{SA} \cong \overline{SD}$, $\overline{SB} \cong \overline{SC}$	
$\angle BSA \cong \angle CSD$	
$\Delta BSA \cong \Delta CSD$	
$\angle A \cong \angle D$	

Practice 4: Complete the proof below:

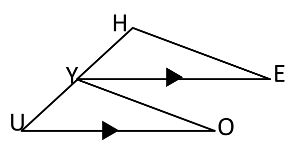


Given: A is the midpoint of $\overline{BC}$ and $\overline{TD}$

Prove: $\angle D \cong \angle T$

A is the midpoint of $\overline{BC}$ and $\overline{TD}$	
$\overline{AB} \cong \overline{AC}$ and $\overline{AT} \cong \overline{AD}$	
$\angle BAD \cong \angle CAT$	
$\Delta BAD \cong \Delta CAT$	
$\angle D \cong \angle T$	

Practice 5: Complete the proof below



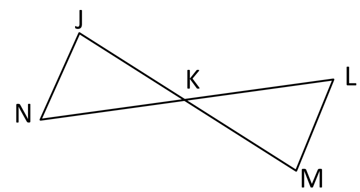
Given: Y is the midpoint of $\overline{HU}$, $\angle E \cong \angle O$, $\overline{YE} \parallel \overline{UO}$

Prove: $\angle YHE \cong \angle UYO$

Y is the midpoint of $\overline{HU}$, $\angle E \cong \angle O$, $\overline{YE} \parallel \overline{UO}$	
$\overline{YH} \cong \overline{YU}$	
$\angle HYE \cong \angle YUO$	
$\Delta HEY \cong \Delta YOU$	
$\angle YHE \cong \angle UYO$	

Example 4: Complete the proof below:

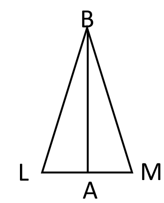
Given: K is the midpoint of $\overline{JM}$, $\angle J \cong \angle M$
Prove: $\angle N \cong \angle L$



K is the midpoint of $\overline{JM}$	
$\angle J \cong \angle M$	

Practice 6: Complete the proof below:

Given: A is the midpoint of $\overline{LM}$, $\overline{BL} \cong \overline{BM}$
Prove: $\angle L \cong \angle M$



A is the midpoint of $\overline{LM}$, $\overline{BL} \cong \overline{BM}$	

Write your own acronym to remember CPCTC:

C______________________________________

P______________________________________

C______________________________________

T______________________________________

C______________________________________