Geometry
Name: _____ Date: _____ 2B-CPCTC Notes

Corresponding Parts of Congruent Triangles are Congruent

- When two triangles are congruent, all corresponding parts* of the two triangles are also congruent.

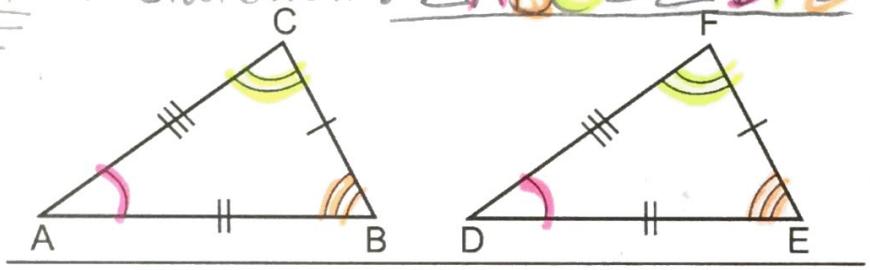
*Corresponding parts include the angles and sides from one triangle (the pre-image) to the next (the image).

- A congruence statement matches the congruent parts in the two figures by naming them in a specific order.

Example:

Statement: $\triangle ABC \cong \triangle DEF$

Not a Statement: $\triangle ABC \cong \triangle DFE$ *this would not be the correct way to name these two triangles as congruent.



Steps for Writing Your Congruence Statements for Triangles

1: Write a congruence statement for the two triangles, making sure to match up the corresponding parts.

2: Use the congruence statement you just wrote to list the pairs of congruent angles.

3: Use the same congruence statement from step 1 to list the pairs of congruent sides.

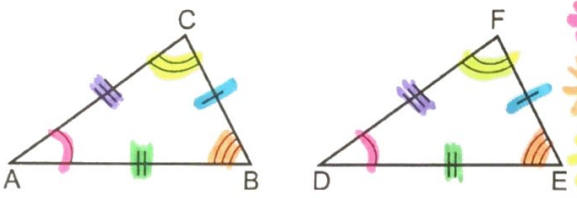
* make sure to use the proper notation!

Sometimes you will need to use 3 letters to name an angle if two angles have the same vertex!

Ex.

can't call it ∠M! Must be specific! Which M? use ∠LMN

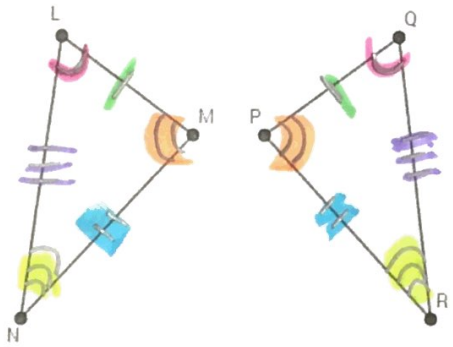
Example one: *Use the following triangles to write a congruence statement and name the congruent parts.*



Congruence Statement: $\triangle ABC \cong \triangle DEF$

Angles	Sides
$\angle A \cong \angle D$	$\overline{AB} \cong \overline{DE}$
$\angle B \cong \angle E$	$\overline{BC} \cong \overline{EF}$
$\angle C \cong \angle F$	$\overline{CA} \cong \overline{FD}$

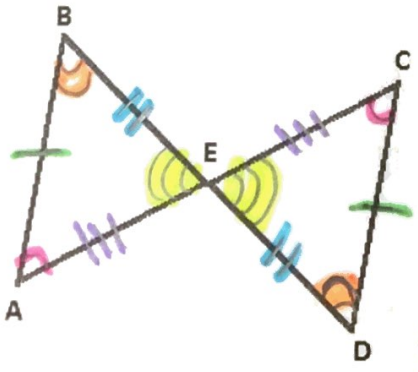
Example two: *Use the angles and sides to mark the given triangle and write a congruence statement for the two triangles.*



Congruence Statement: $\triangle LMN \cong \triangle QPR$

Angles	Sides
$\angle L \cong \angle Q$	$\overline{LM} \cong \overline{QP}$
$\angle M \cong \angle P$	$\overline{MN} \cong \overline{PR}$
$\angle N \cong \angle R$	$\overline{NL} \cong \overline{RQ}$

Example three: *Use the congruence statement to list all congruent sides and angles. Mark the given triangles as well.*



Congruence Statement: $\triangle ABE \cong \triangle CDE$

Angles	Sides
$\angle A \cong \angle C$	$\overline{AB} \cong \overline{CD}$
$\angle B \cong \angle D$	$\overline{BE} \cong \overline{DE}$
$\angle AEB \cong \angle CED$	$\overline{EA} \cong \overline{EC}$

can't just call them $\angle E$ because two angles work here!

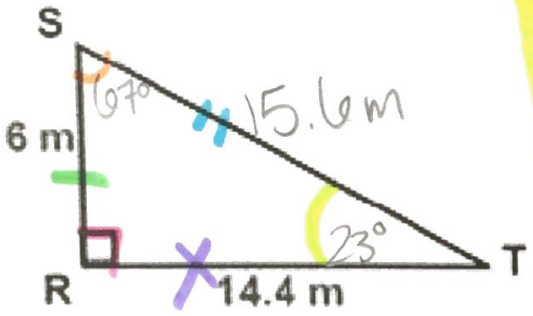
Corresponding Parts of Congruent Triangles are Congruent Theorem (CPCTC)

- **CPCTC Theorem:** If two triangles are Congruent, then corresponding Sides are congruent and corresponding angles are congruent.
- **CONVERSE:** IF six pairs of corresponding sides and corresponding angles are congruent, THEN you can conclude that the two triangles are congruent.

Example:

use congruence to copy parts over to other Δ!! ☺

$\Delta RST \cong \Delta UVW$. Find all missing sides and angles.



180
−90
90
−67
23