

TOPIC: 4.6 Use Congruent Triangles

NAME: Mrs. H

DATE: Key

ESSENTIAL QUESTION: How can you use $\cong \Delta$ to prove \angle or sides \cong ?

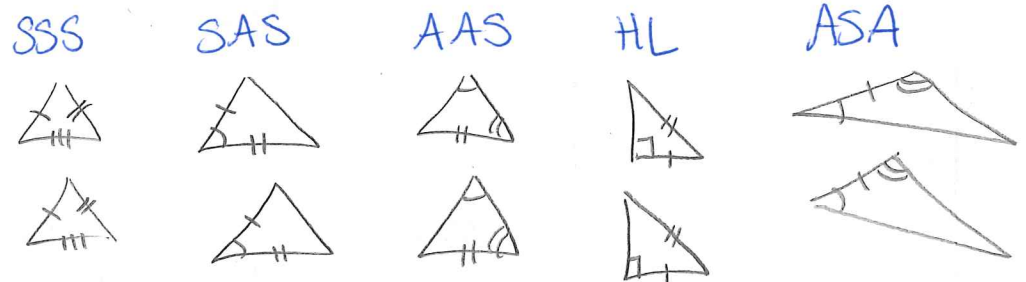
QUESTIONS:

Corresponding Parts of Congruent Triangles are Congruent CPCTC
(related to the definition of congruent figures)

If there are two or more congruent triangles, then

Corresponding parts (sides, angles) are congruent.

A1. Give the abbreviation name for each of the five triangle congruence shortcuts. Include a sketch of the congruence situation.

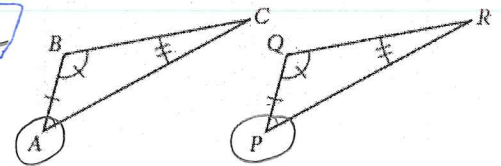


A2. Use the figures at the right to explain why each congruence is true.

a. $\angle A \cong \angle P$ AAS \cong CPCTC

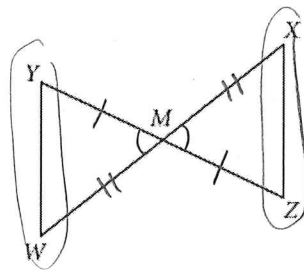
b. $\overline{BA} \cong \overline{QP}$ Given

c. $\Delta ABC \cong \Delta PQR$ AAS $\Delta \cong$



*

A3. M is the midpoint \overline{WX} and \overline{YZ} . Is $\overline{WY} \cong \overline{XZ}$? Why?



Yes

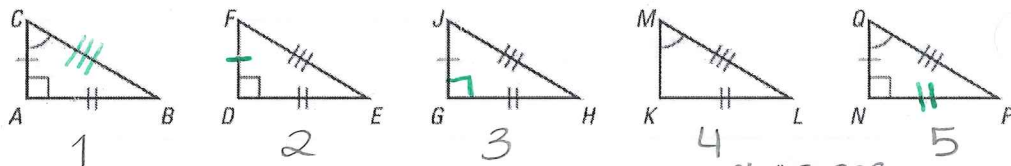
Def. of mpt.
Def. of mpt.
VA \cong Thm
SAS $\Delta \cong$
CPCTC

SUMMARY:

Given $\cong \Delta$ then the corresponding parts are \cong
(CPCTC)

QUESTIONS:

A4. Circle the triangles below that are congruent.

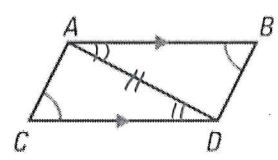


$\Delta 1 \cong \Delta 5$ ASA, now mark CPCTC
 $\Delta 1 \cong \Delta 3$ SSS
 $\Delta 1 \cong \Delta 2$ HL
 1, 2, 3, 5
 all $\cong \Delta$



A5. Make a plan to prove the statement... $\overline{AC} \cong \overline{DB}$

$\angle ACD \cong \angle DBA$ Given
 $\overline{AD} \cong \overline{AD}$ Reflexive
 $\angle BAD \cong \angle CDA$ AIA thm
 $\Delta CDA \cong \Delta BAD$ AAS \cong
 $\overline{AC} \cong \overline{DB}$ CPCTC

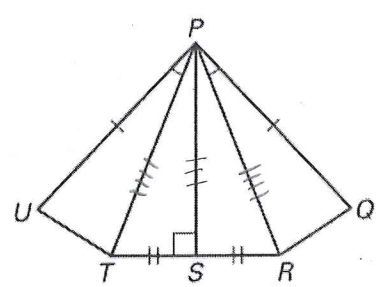


A6. What does "CPCTC" stand for?

Congruent Parts of Congruent Triangles are Congruent

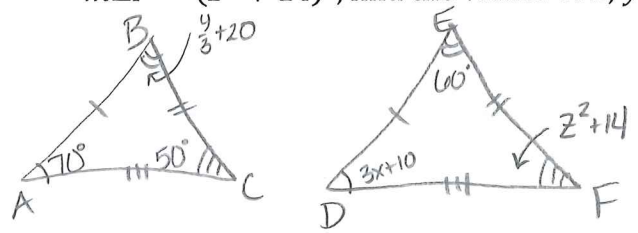
A7. GIVEN: $\overline{RS} \cong \overline{ST}$,
 $\overline{PU} \cong \overline{PQ}$,
 $\angle UPT \cong \angle QPR$

PROVE: $\Delta PTU \cong \Delta PRQ$



Statement	Reason
1) $\overline{RS} \cong \overline{ST}$	1) Given
2) $\overline{PU} \cong \overline{PQ}$	2) Given
3) $\angle UPT \cong \angle QPR$	3) Given
4) $\overline{PS} \cong \overline{PS}$	4) Reflexive
5) $\Delta PST \cong \Delta PSR$	5) SAS \cong
6) $\overline{PT} \cong \overline{PR}$	6) CPCTC
7) $\Delta PTU \cong \Delta PRQ$	7) SAS $\Delta \cong$

A8. Given that $\Delta ABC \cong \Delta DEF$, $m\angle A = 70^\circ$, $m\angle B = (\frac{y}{3} + 20)^\circ$,
 $m\angle C = 50^\circ$, $m\angle D = (3x + 10)^\circ$, $m\angle E = 60^\circ$, and
 $m\angle F = (z^2 + 14)^\circ$, find the values of x, y, and z.



$50 = z^2 + 14$

$36 = z^2$

$z = 6$

$3x + 10 = 70$

$3x = 60$

$x = 20$

$\frac{y}{3} + 20 = 60$

$y = 40$

$y = 120$