

TOPIC/OBJECTIVE:

GS: Triangle Proofs

CONTENT/CLASS:

Geometry

NAME:

CLASS/PERIOD:

7

DATE:

1/29/16

ESSENTIAL QUESTION:

What information do I need to prove that two triangles are congruent?

QUESTIONS:

\sim means Similar. \cong means congruent

Δ means triangle

Look around at the posters of triangles we created. Which posters show triangles that are all the same? Which posters show triangles that are different? Based on this, list what you need to know about a triangle in order to prove they are congruent (for example, one side, a side and an adjacent angle, all three sides, a side and an opposite angle, etc.)

Same Δ (As are \cong)

Not the same Δ (\cong)

B: side-side-side (SSS)

A: side-side

} not enough to prove \cong

G: side-angle-side (SAS)

C: side-adj angle

} not enough to prove \cong

H: angle-angle-side (AAS)

D: side opp angle

} \cong not

F: angle-side-angle (ASA)

E: angle-angle (AA)

} \cong not

I: angle-side-side (ASS)
side-side-angle (SSA)

} not enough to prove \cong

All of the above are enough to prove that As are \cong

Reminders from Semester 1

Similar: shape is same, size could be different
Similarity conjectures used to prove

Similarity: SSS, SAS, AA

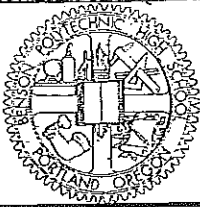
keyword: proportional symbol is \sim

congruent: same shape and same size

Symbol: \cong

SUMMARY:

keywords: the same, equal



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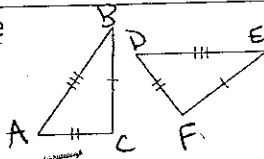
DATE:

ESSENTIAL QUESTION:

QUESTIONS:

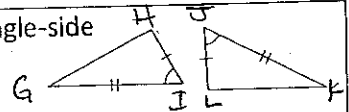
(ways to prove Δ s are \cong)
 Congruence Conjectures for Δ s

side-side-side



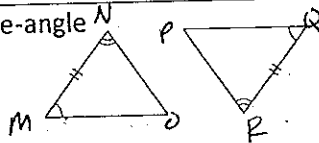
$S \overline{AB} \cong \overline{DE}$
 $S \overline{AC} \cong \overline{DF}$
 $S \overline{CB} \cong \overline{FE}$
 *use SSS when all sides are marked \cong

side-angle-side



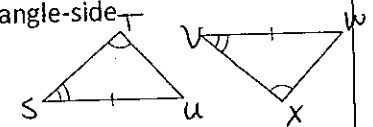
$S \overline{GI} \cong \overline{JK}$
 $A \angle I \cong \angle J$
 $S \overline{HI} \cong \overline{LJ}$
 *angle must be between the sides

angle-side-angle



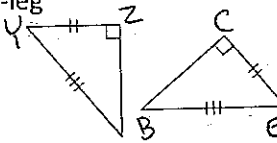
$A \angle N \cong \angle R$
 $S \overline{MN} \cong \overline{QR}$
 $A \angle M \cong \angle Q$
 (side is between angles)

angle-angle-side



$A \angle X \cong \angle T$
 $A \angle V \cong \angle S$
 $S \overline{SU} \cong \overline{TV}$
 *side is NOT between angles

hypotenuse-leg



$H \overline{YA} \cong \overline{BE}$
 $L \overline{YZ} \cong \overline{CE}$
 *only works for right Δ s

Sets of sides and angles that DON'T prove congruence:

ASS
 SSA
 AA
 SA
 SS
 S
 A
 none of these prove \cong

SUMMARY: