# D.I.R.T?

1) Given figure DEFG NSTP, list all the congruent parts.

Sides

$\overline{DE} \cong \overline{NS}$

$\overline{DG} \cong \overline{NP}$

$\overline{FG} \cong \overline{TP}$

$\overline{EF} \cong \overline{ST}$

$\angle$

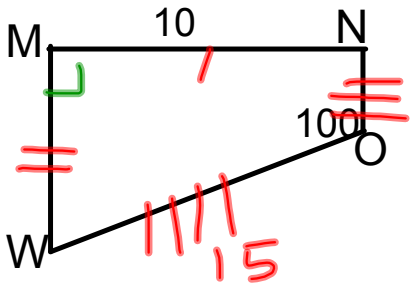
$\angle D \cong \angle N$

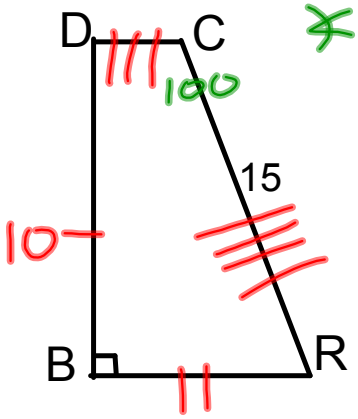
$\angle S \cong \angle E$

$\angle T \cong \angle F$

$\angle G \cong \angle P$

Given figures MNOW BDCR, fill in the blanks.




2) BD= 10

3) m<C= 100°

4) $\overline{MW}$ $\overline{BR}$

5) m<M= 90°

6) <R $\angle W$

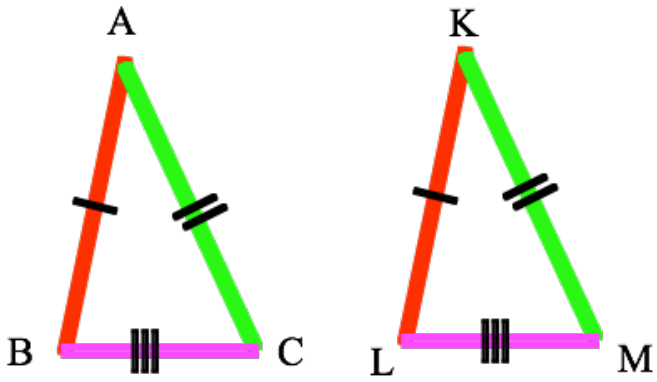
7) OW= 15

4.2 Triangle Congruence by SSS and SAS

Objective: To prove two triangles congruent using the SSS and SAS Postulates
M.2.B.
Performance Standard 3.4, 3.5 DOK-1
Knowledge MA 3

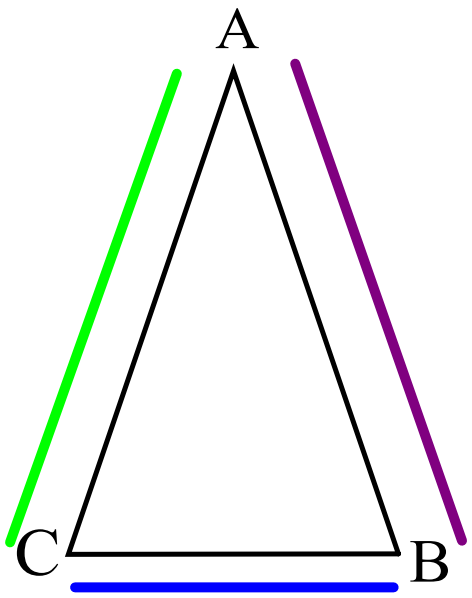
## CONGRUENT TRIANGLES by SIDE-SIDE-SIDE

S S S




△ABC ≅ △KLM by SSS

SSS - Side-Side-Side Postulate-
If 3 sides of one triangle are congruent to 3 sides of another triangle, then they are congruent.




Given the two sides, what is the included angle?

AC and AB ∠A

AC and CB ∠C

<B is included by which two sides? $\overline{BC}$ & $\overline{BA}$

Given the two angles, what is the included side?

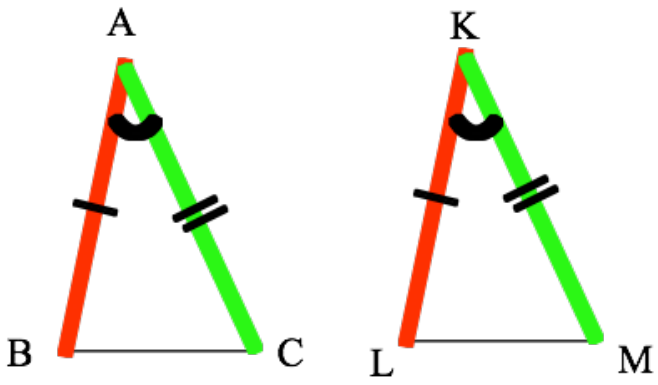
<A and <B $\overline{AB}$

<B and <C $\overline{BC}$

AC is the included side for which two angles?

∠A & ∠C

CONGRUENT TRIANGLES by SAS

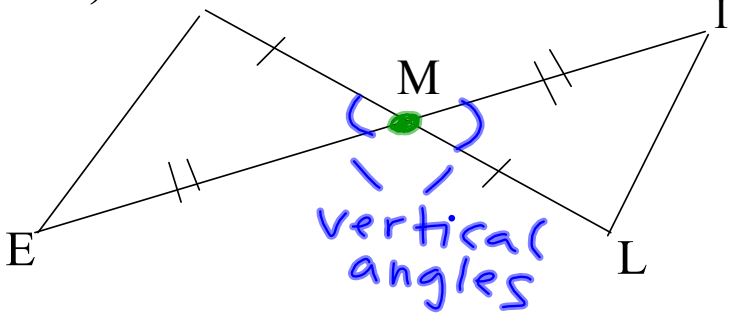



△ABC ≅ △KLM by *SAS*

SAS- Side-Angle-Side Postulate
If 2 sides and one included angle are congruent to 2 sides and one included angle of another triangle, then the triangles are congruent.

Tell whether the triangles are congruent. If so, justify and write a congruence statement.

ex 1)




vertical angles

Know:

$\overline{SM} \cong \overline{ML}$

$\overline{EM} \cong \overline{MI}$

Found:

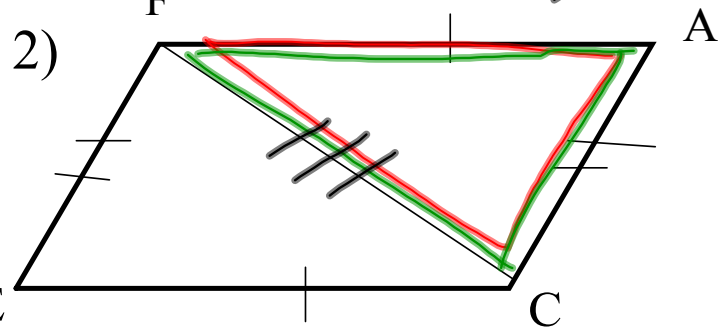
Vertical ∠'s

$\triangle MSE \cong \triangle MLI$

by SAS

Reflexive (share it)

ex 2)




Know:

$\overline{FA} \cong \overline{EC}$

$\overline{AC} \cong \overline{EF}$

$\triangle$s $\cong$ SSS

$\triangle CEF \cong \triangle FAC$

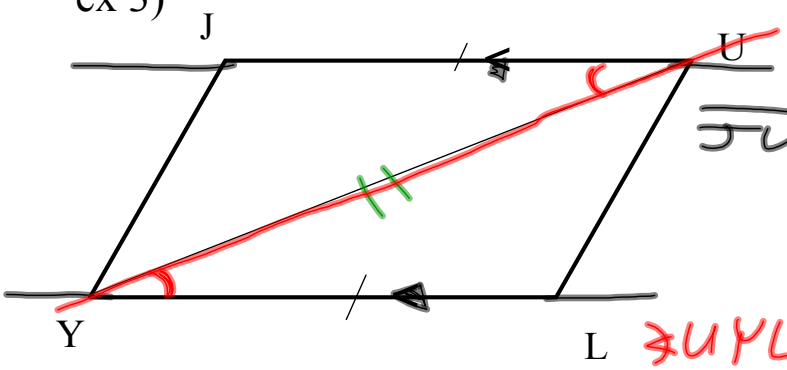
Found:

$\overline{FC} \cong \overline{FC}$

* Reflexive

Tell whether the triangles are congruent. If so, justify and write a congruence statement.

ex 3)




Know:

$\overline{JY} \cong \overline{YL}$

Found:

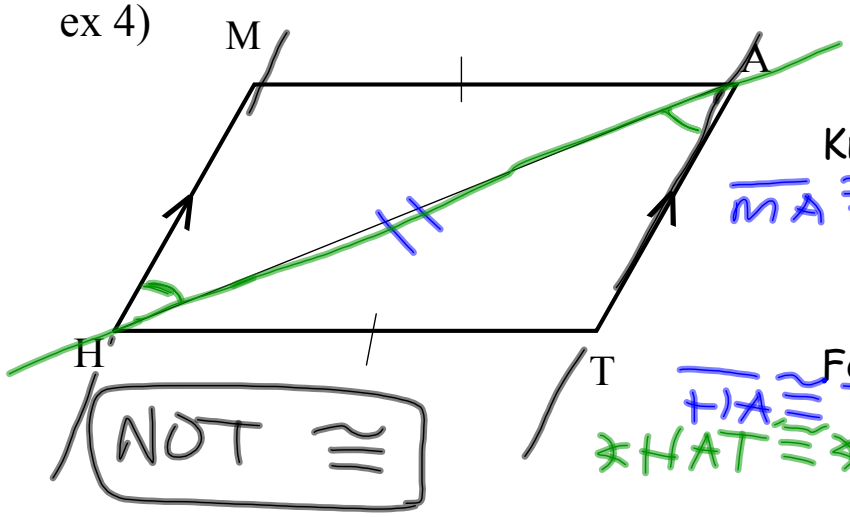
$\angle UYL \cong \angle JUY$

$\overline{UY} \cong \overline{UY}$

$\triangle s \cong SAS$

$\triangle YUL \cong \triangle UYJ$

ex 4)




Know:

$\overline{MA} \cong \overline{HT}$

Found:

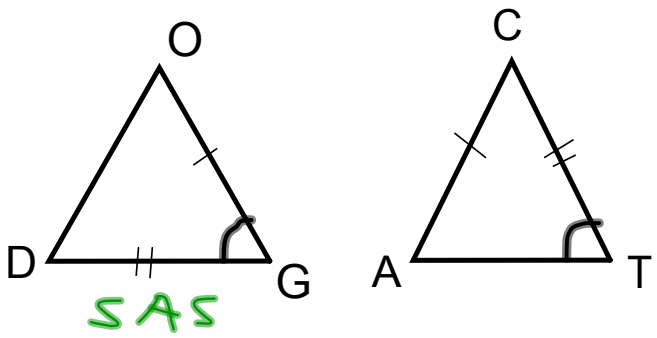
$\overline{HA} \cong \overline{HA}$

$\angle HAT \cong \angle MHA$

NOT $\cong$

Are these triangles congruent?

NOT ≅




SAS