Unit 6
Lesson 2

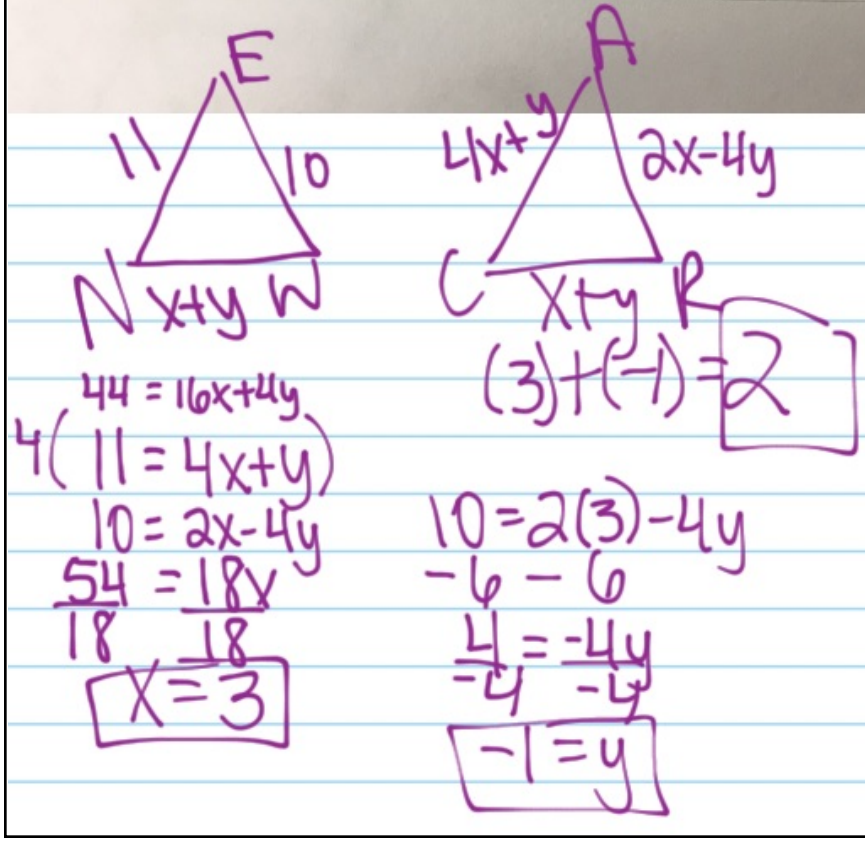
Proving Triangles Congruent

10. Given: $\Delta NEW \cong \Delta CAR$

$EN = 11$ $\quad AR = 2x - 4y$ $\quad NW = x + y$

$EW = 10$ $\quad CA = 4x + y$

Draw the triangles and solve for x, y *and* CR.



$44 = 16x + 4y$

$4(11 = 4x + y)$

$10 = 2x - 4y$

$\frac{54}{18} = \frac{18x}{18}$

$x = 3$

$10 = 2(3) - 4y$

$-6 \quad -6$

$\frac{4}{-4} = \frac{-4y}{-4}$

$-1 = y$

$(3) + (-1) = 2$

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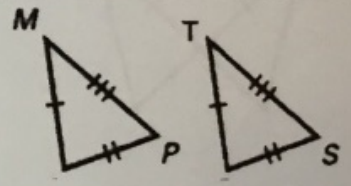
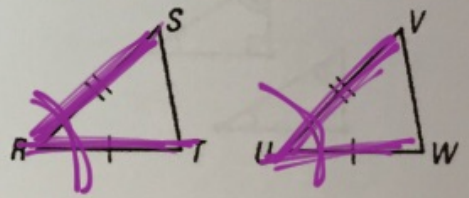
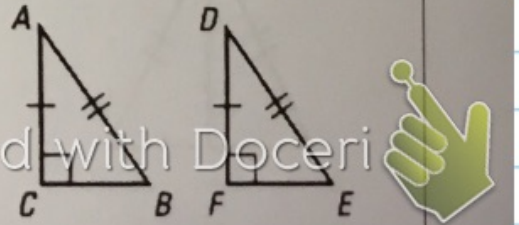
Math 2 – Honors
Unit 6 –Triangles & Congruence
Lesson 2 → Proving Triangles Congruent

Name_____
Date_____Pd_____

➢ There are 5 statements that will allow us to prove that 2 triangles are congruent:

Side Side Side Congruence **SSS**	3 pairs of corresponding congruent sides	
Side Angle Side Congruence **SAS**	2 pairs of corresponding congruent sides and a corresponding *included* congruent angle	
Hypotenuse Leg Congruence **HL**	Only for RIGHT TRIANGLES: Congruent hypotenuses and one pair of corresponding congruent sides	

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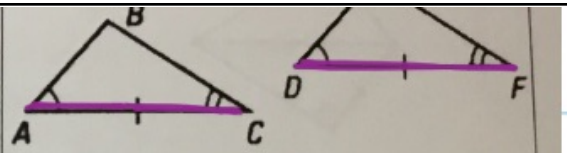
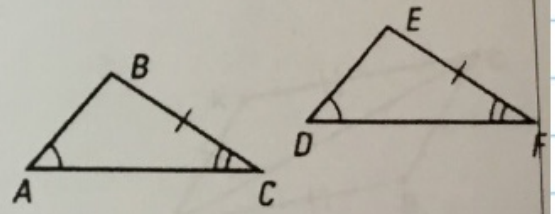
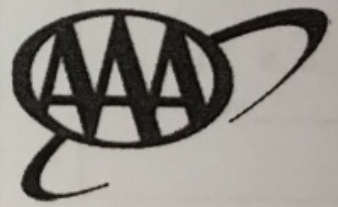
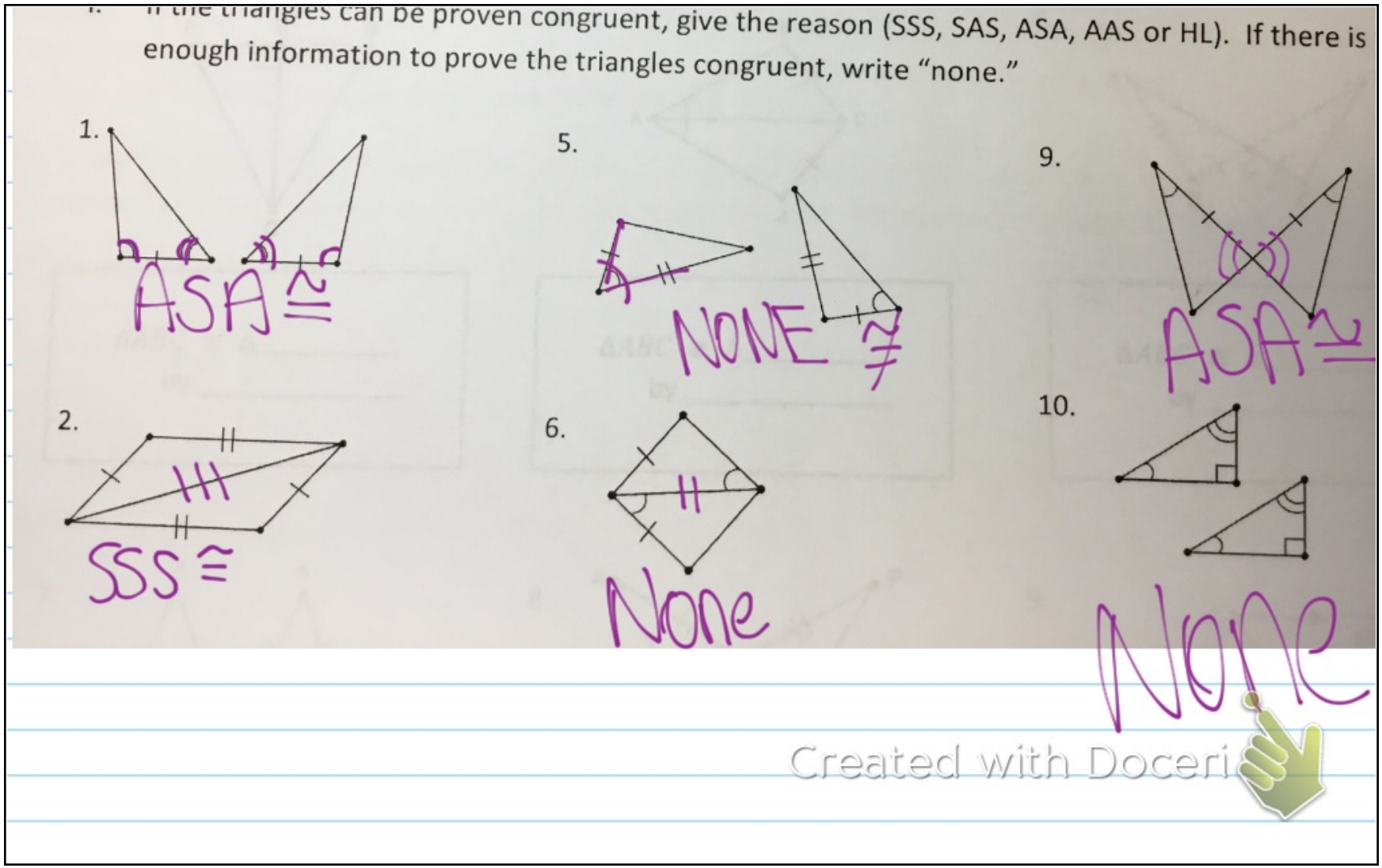
Angle Side Angle Congruence **ASA**	2 pairs of corresponding congruent angles and the *included* corresponding side congruent	
Angle Angle Side Congruence **AAS**	2 pairs of corresponding congruent angles and 1 pair of corresponding *nonincluded* congruent sides	
FALSE SHORCUTS	Angle Angle Angle Side Side Angle Congruence **AAA or SSA (ASS)**	 Created with Doceri


if the triangles can be proven congruent, give the reason (SSS, SAS, ASA, AAS or HL). If there is enough information to prove the triangles congruent, write "none."
1.
ASA ≅
2.
SSS ≅
5.
NONE ≇
6.
None
9.
ASA ≅
10.
None
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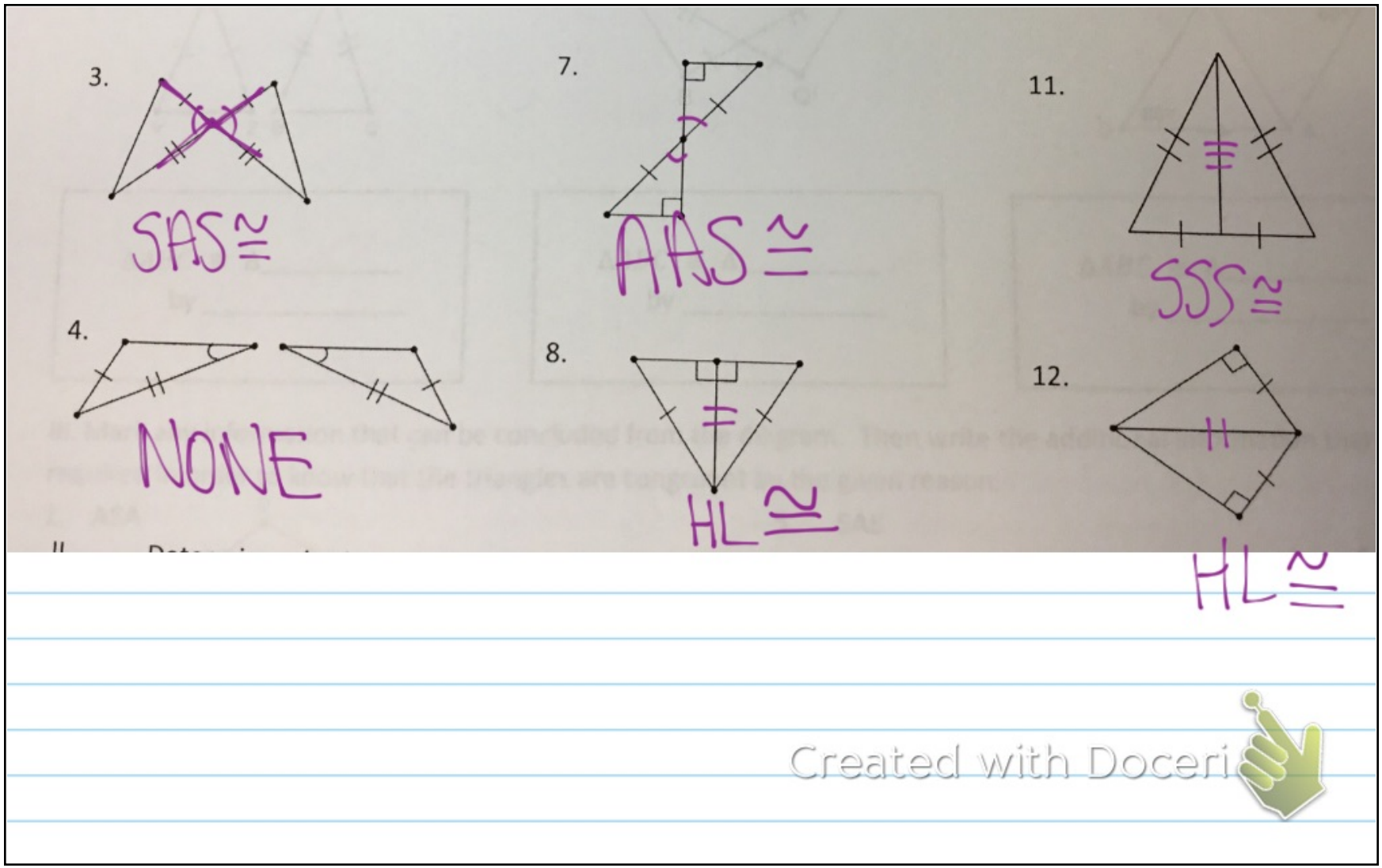
3.
SAS≅
4.
NONE
7.
AAS≅
8.
HL≅
11.
SSS≅
12.
HL≅
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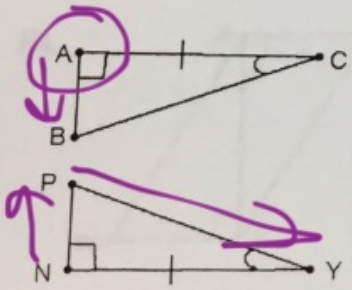
Determine whether you can conclude that another triangle is congruent to ΔABC.

- If so, complete the congruence statement and give the reason (SSS, SAS, ASA, AAS or HL).
- If not, write "none."

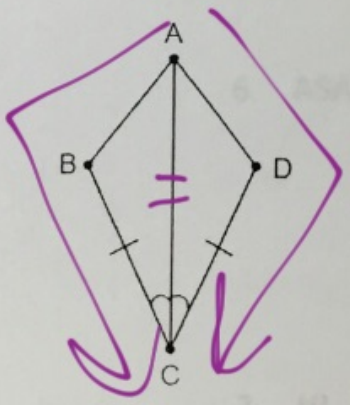
1.



$\Delta ABC \cong \Delta$ NPY

by ASA

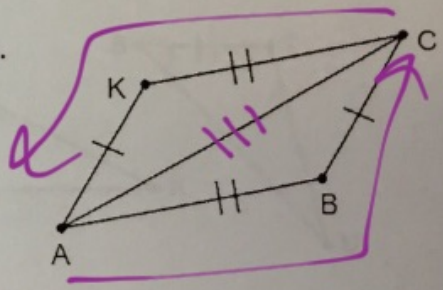
2.



$\Delta ABC \cong \Delta$ ADC

by SAS

3.



$\Delta ABC \cong \Delta$ CKA

by SSS

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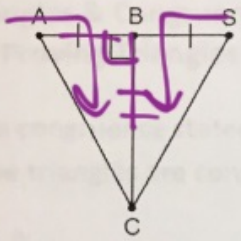
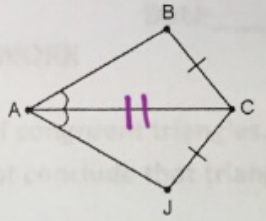
4.



$\Delta ABC \cong \Delta$ SBC

by SAS

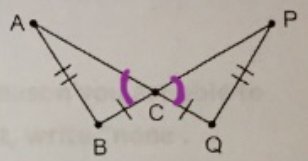
5.



$\Delta ABC \cong \Delta$ NONE

by

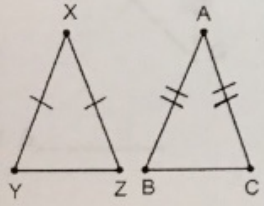
6.



$\Delta ABC \cong \Delta$ NONE

by

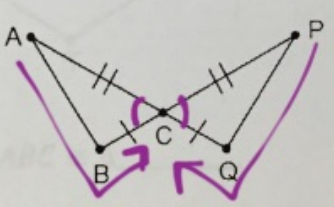
7.



$\Delta ABC \cong \Delta$ NONE

by

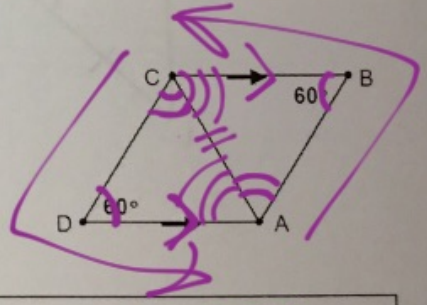
8.



$\Delta ABC \cong \Delta$ PQC

by SAS

9.



$\Delta ABC \cong \Delta$ CDA

by AJA

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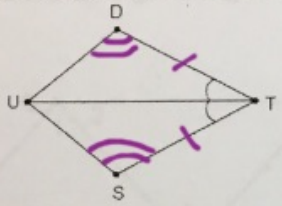
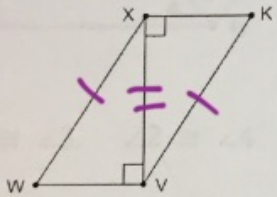
III. Mark any information that can be concluded from the diagram. Then write the additional information that is required in order to know that the triangles are congruent by the given reason.

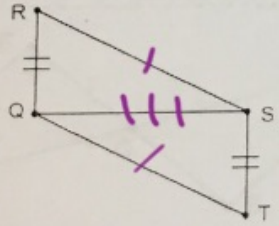
1. **ASA**



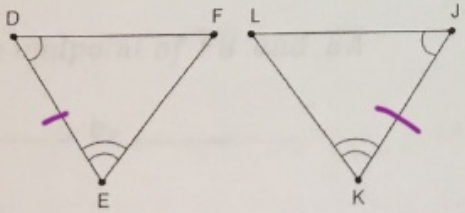
2. **HL**



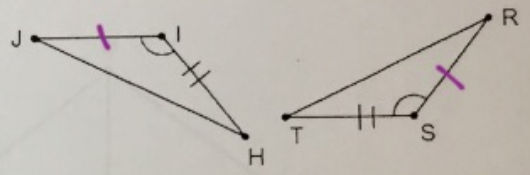
3. **SSS**



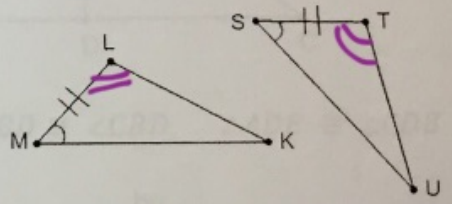
4. **ASA**



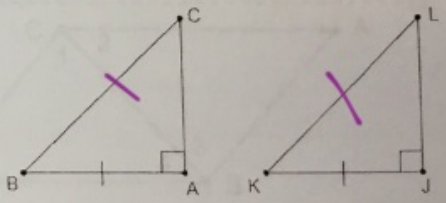
5. **SAS**



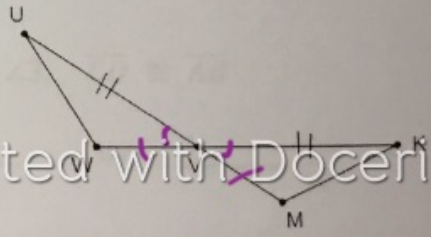
6. **ASA**



7. **HL**



8. **SAS**



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Quiz Practice Pg: 9-14

- Congruence Statements pg 7: 1-3
- CPCTC pg 4: 1-4
- Determine Congruence

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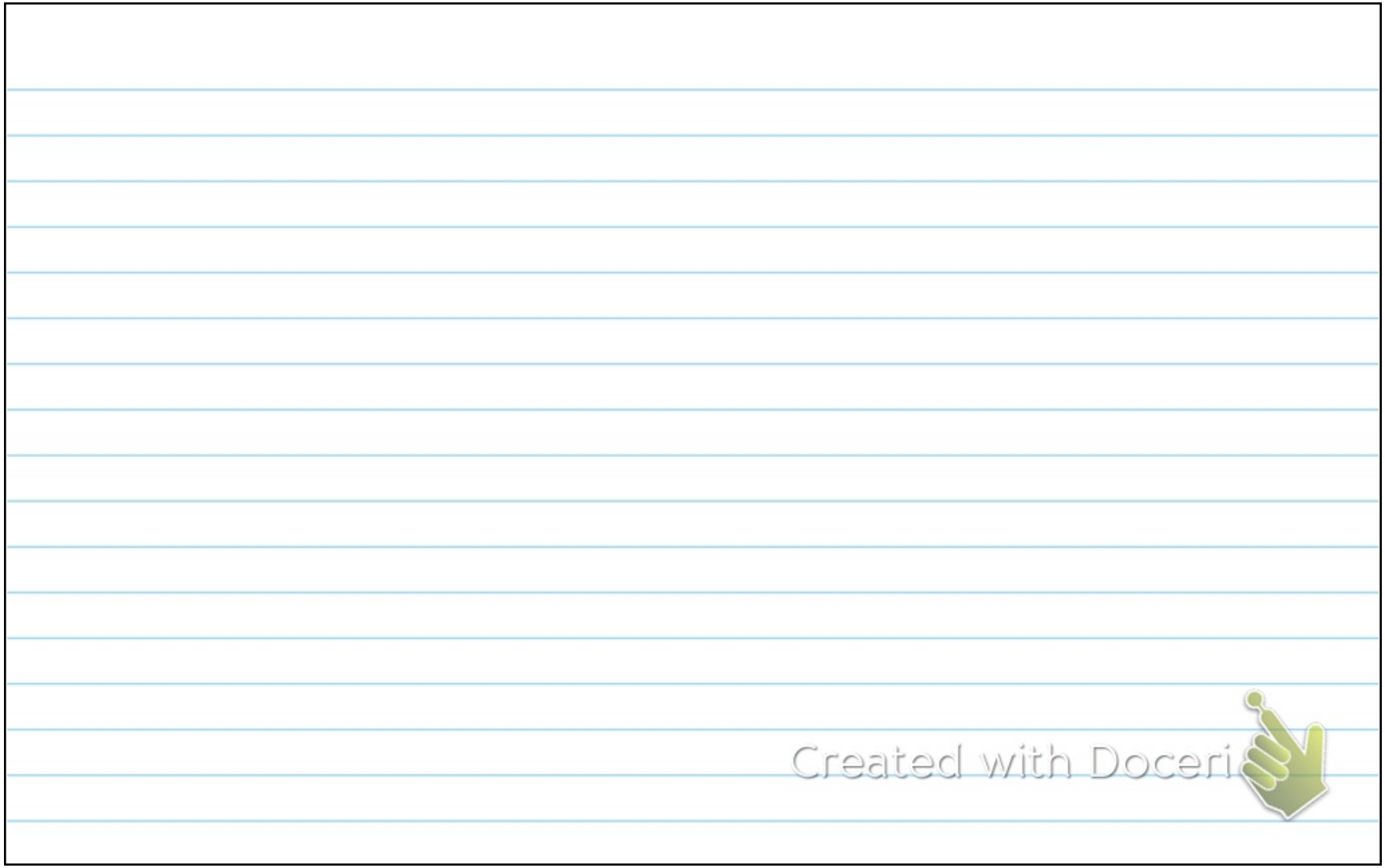
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