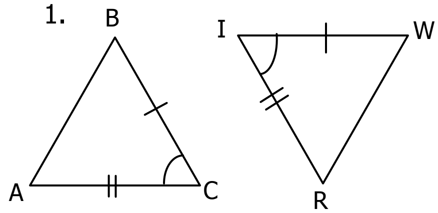
AGS Station 1 name: ___________________________

Proving Triangles Congruent: ASA, AAS, SAS, SSS date: ___________________________

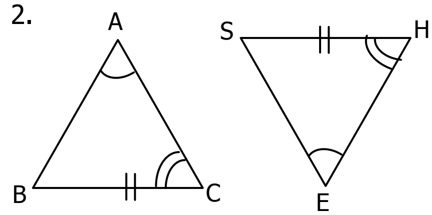
For each problem give the correct naming order of the congruent triangles. Write that name in order on the lines for the problem number (see box at bottom). Also, indicate which postulate or theorem is being used.

1.



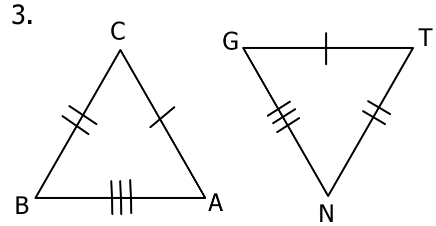
ΔABC ≅ Δ ________ by __________

2.



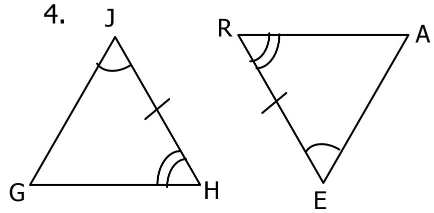
ΔABC ≅ Δ ________ by __________

3.



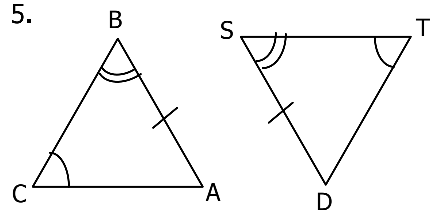
ΔABC ≅ Δ ________ by __________

4.



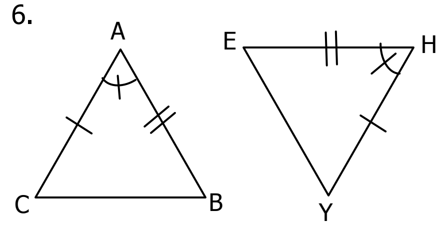
ΔGHJ ≅ Δ ________ by __________

5.



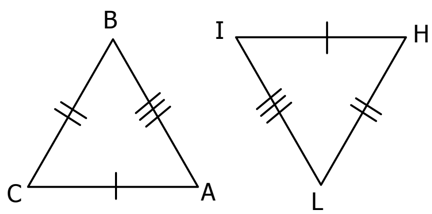
ΔABC ≅ Δ ________ by __________

6.



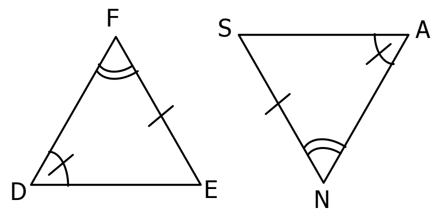
ΔABC ≅ Δ ________ by __________

7.



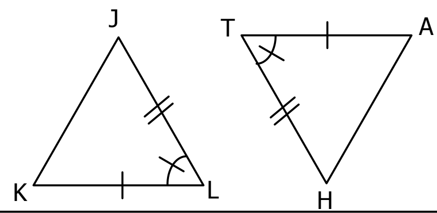
ΔABC ≅ Δ ________ by __________

8.



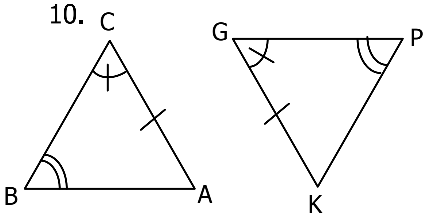
ΔDEF ≅ Δ ________ by __________

9.



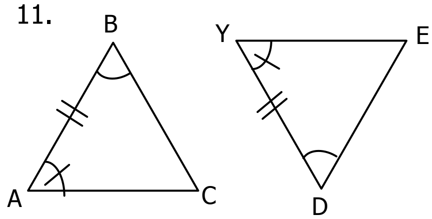
ΔJKL ≅ Δ ________ by __________

10.



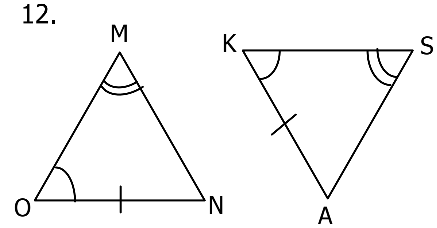
ΔABC ≅ Δ ________ by __________

11.



ΔABC ≅ Δ ________ by __________

12.



ΔMNO ≅ Δ ________ by __________

___ ___ ___ ___ ___ _O_ ___ ___ _N_ ___ ___ ___ _S_ ___ ___ _E_ ___ _I_ ___ ___ ___ ___ ___ _T_ ___

4 4 4 8 8 8 12 12 12 2 2 2 5 5 5 9 9 9 6

___ ___ ___ _E_ _E_ ___ ___ ___ _O_ ___ ___ _N_ ___ _U_ ___ ___ ___ ___ _T_ ___ _E_ ___ ___ _I_ ___ .

6 6 10 10 10 1 1 1 3 3 3 7 7 7 11 11 11

(When you are done with the puzzle, there are: 3 SAS, 5 AAS, 2 ASA, and 2 SSS instances.)

AGS Name: _____

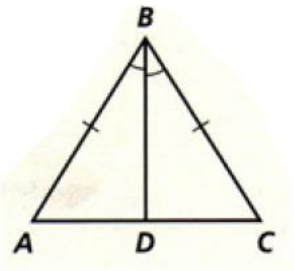
Station 2: Triangle Congruence

a) Determine whether the following triangles are congruent

b) If they are, name the triangle congruence (pay attention to proper correspondence when naming the triangles) and then identify the Theorem or Postulate (SSS, SAS, ASA, AAS, HL) that supports your conclusion

c) Be sure to show any additional congruence markings you used in your reasoning

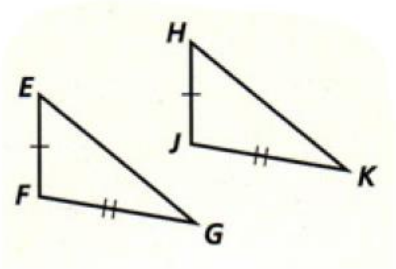
d) if the triangles cannot be proven congruent, state “not possible.”



Congruence:

ΔABD ≅ Δ _____

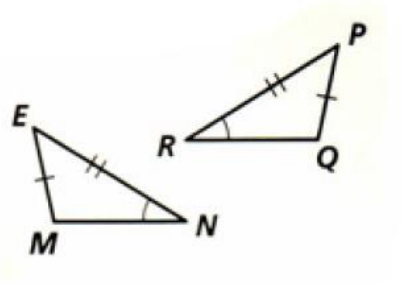
Reason:



Congruence:

ΔEFG ≅ Δ _____

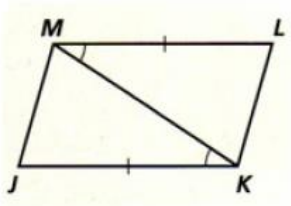
Reason:



Congruence:

ΔEMN ≅ Δ _____

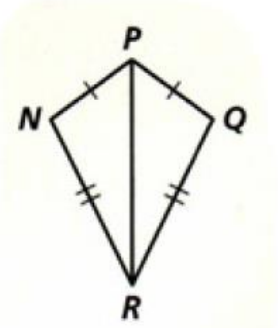
Reason:



Congruence:

ΔKJM ≅ Δ _____

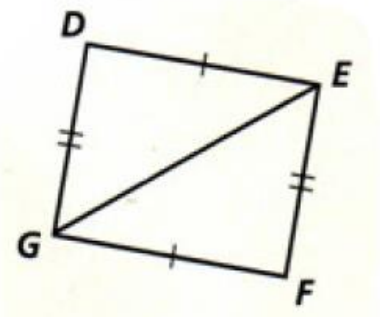
Reason:



Congruence:

ΔNPR ≅ Δ _____

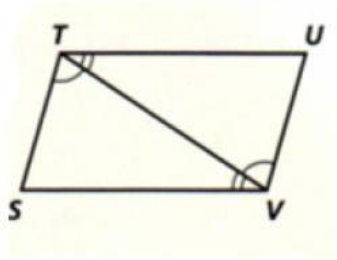
Reason:



Congruence:

ΔDEG ≅ Δ _____

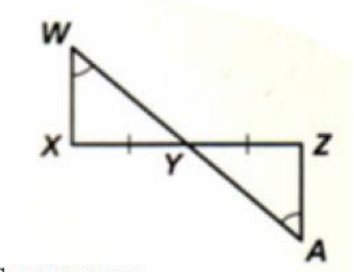
Reason:



Congruence:

ΔSTV ≅ Δ _____

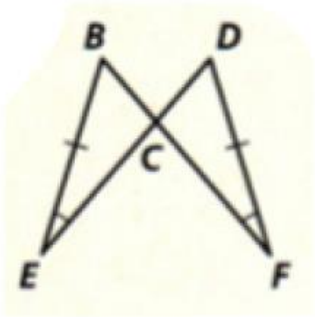
Reason:



Congruence:

ΔWXY ≅ Δ _____

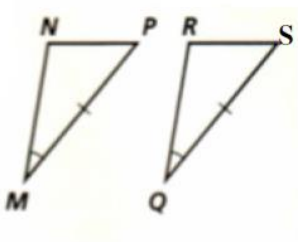
Reason:



Congruence:

ΔBCE ≅ Δ _____

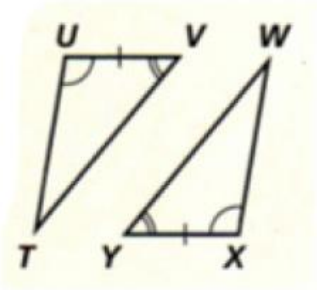
Reason:



Congruence:

ΔNPM ≅ Δ _____

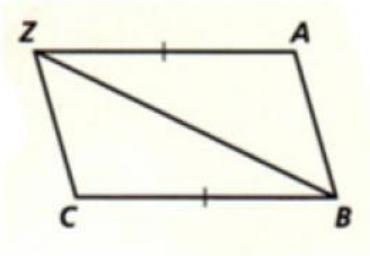
Reason:



Congruence:

ΔTUV ≅ Δ _____

Reason:

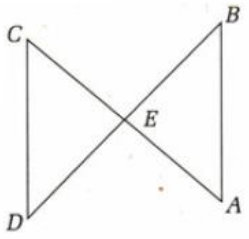


Congruence:

ΔBCZ ≅ Δ _____

Reason:

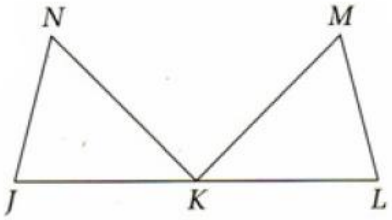
Use the given information to mark the diagram appropriately. Name the triangle congruence and then identify the theorem or postulate (SSS, SAS, ASA, AAS, HL) that would be used to prove the triangles congruent.



Given: $\overline{CD} \cong \overline{AB}; \angle B \cong \angle D$

Congruence:
$\Delta CDE \cong \Delta$ _____

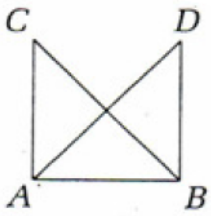
Reason:



Given: $\overline{JN} \cong \overline{LM}; \overline{NK} \cong \overline{MK}; \angle N \cong \angle M$

Congruence:
$\Delta JKN \cong \Delta$ _____

Reason:

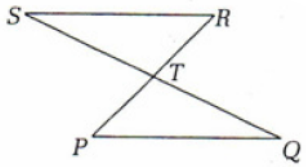


Given: $\overline{AC} \cong \overline{BD}; \overline{AD} \cong \overline{BC}$

Congruence:

$\Delta ABC \cong \Delta$ _____

Reason:

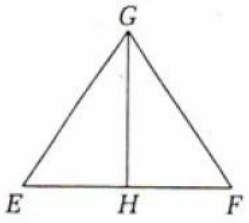


Given: $\overline{SQ}$ and $\overline{PR}$ bisect each other

Congruence:

$\Delta RST \cong \Delta$ _____

Reason:



Congruence: **$\Delta EGH \cong \Delta$ _____**

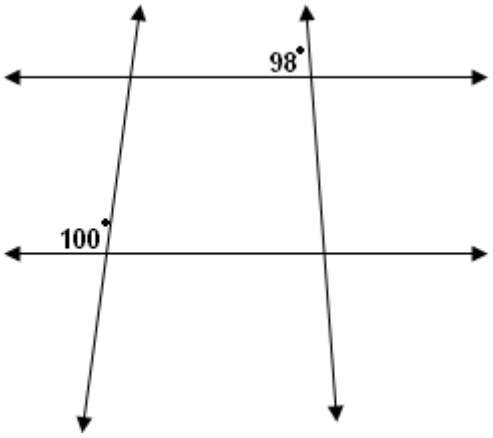
Reason:

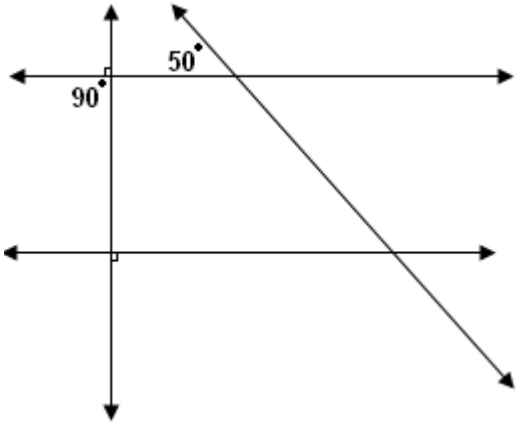
Given: $\overline{GH}$ bisects **$\angle EGF$**; $\overline{EG} \cong \overline{FG}$

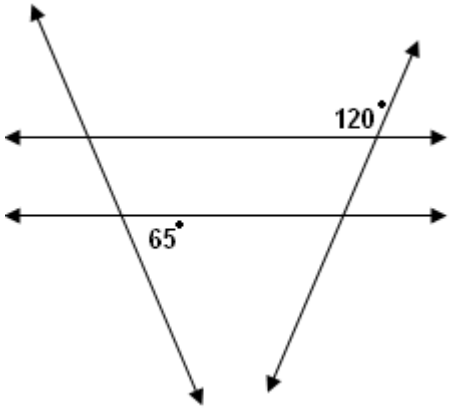
Student Name: _____ **Score:**

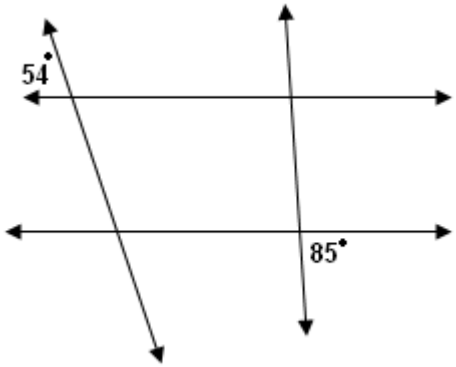
Parallel Lines and Transversals Worksheet

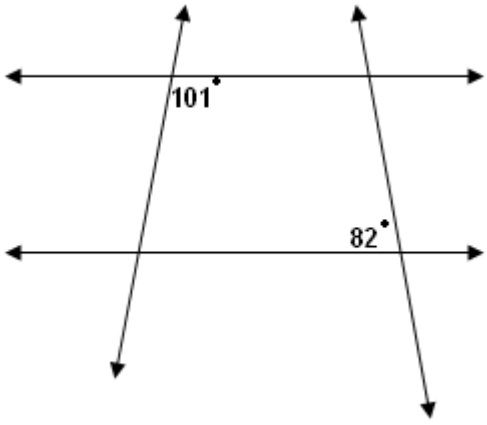
Write all the angles from the given angles:

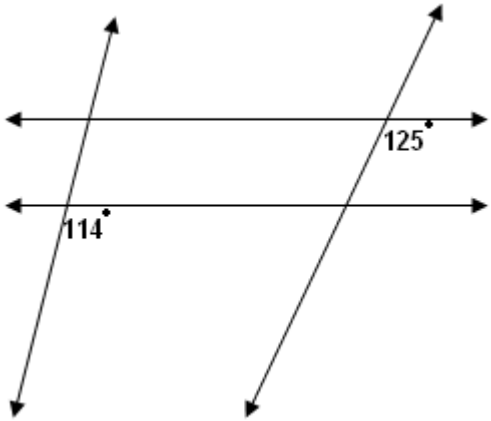






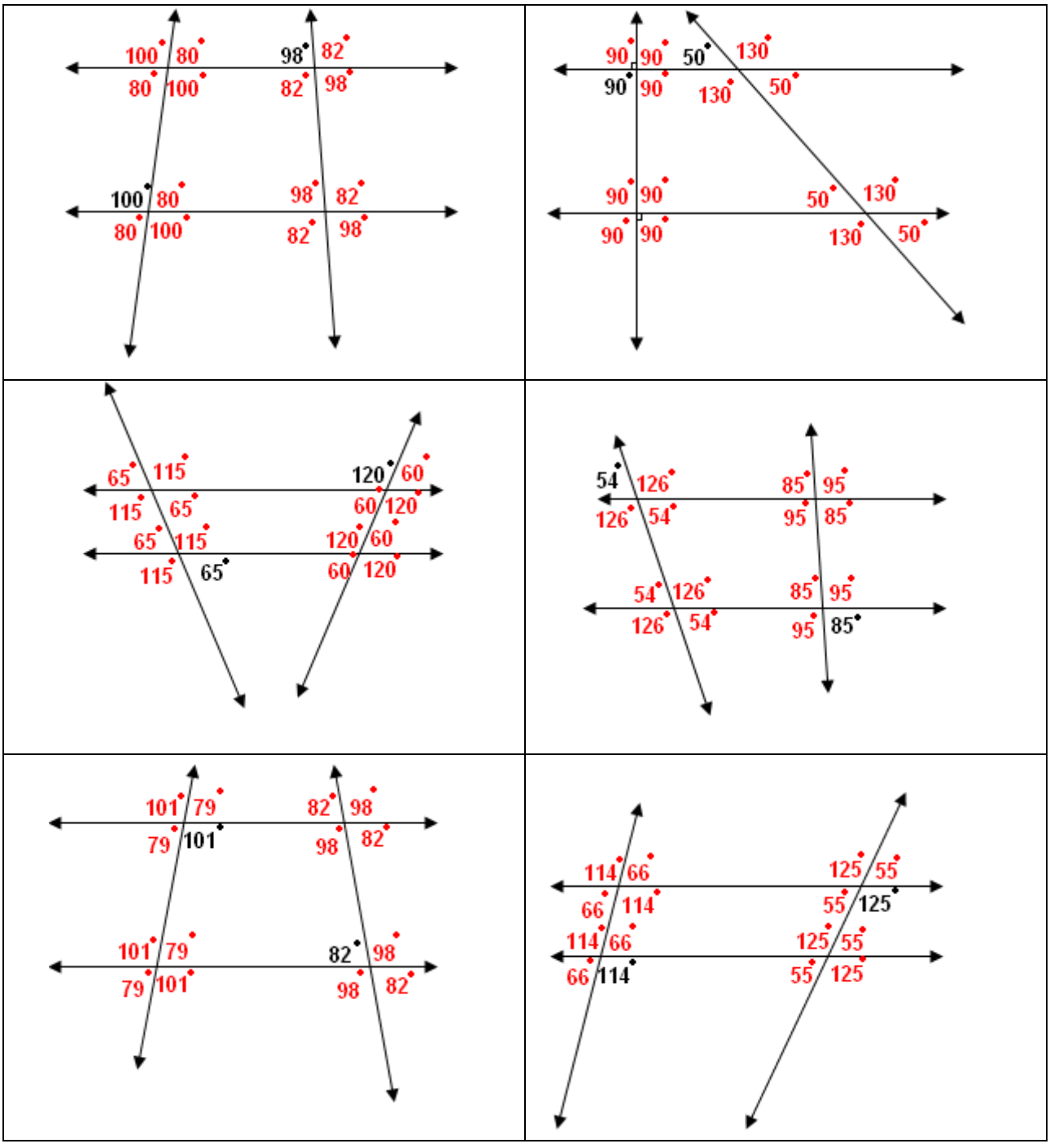




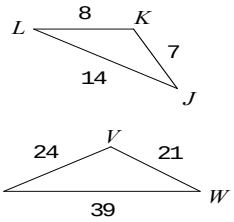


Student Name: _____ **Score:**

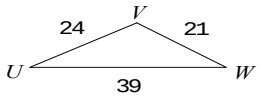
Answers



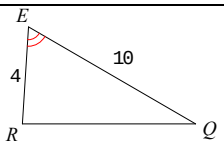
ANSWER KEY



#1

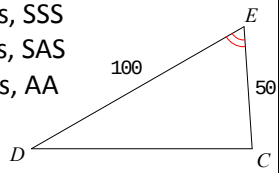


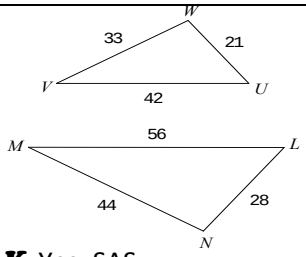
J. Yes, SSS
K. Not Similar
L. Yes, SAS
M. Yes, AA



#4

N. Not Similar
O. Yes, SSS
P. Yes, SAS
Q. Yes, AA

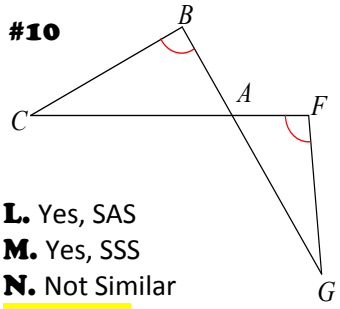




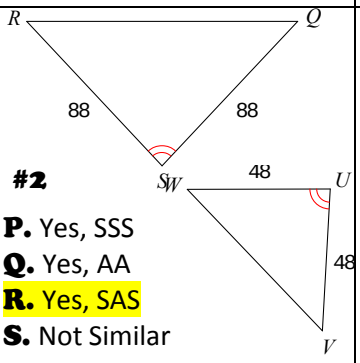
K. Yes, SAS
L. Yes, SSS
M. Yes, AA
N. Not Similar

#7

#10

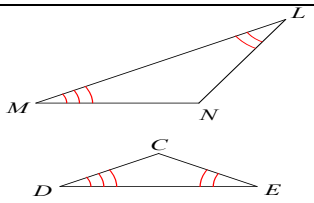


L. Yes, SAS
M. Yes, SSS
N. Not Similar
O. Yes, AA



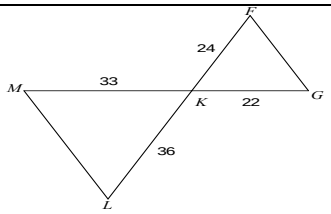
#2

P. Yes, SSS
Q. Yes, AA
R. Yes, SAS
S. Not Similar



P. Not Similar
Q. Yes, SSS
R. Yes, SAS
S. Yes, AA

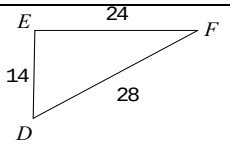
#5



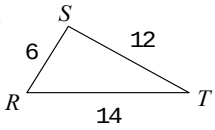
D. Yes, AA
E. Not Similar
F. Yes, SAS
G. Yes, SSS

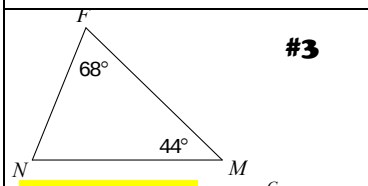
#8

#11



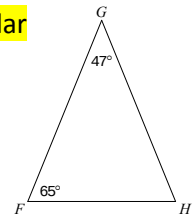
B. Not Similar
C. Yes, SSS
D. Yes, AA
E. Yes, SAS

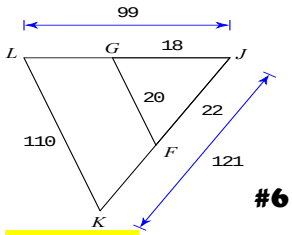




#3

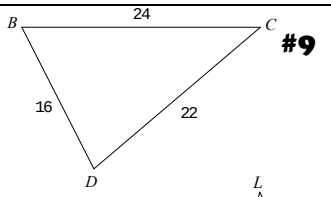
W. Not Similar
X. Yes, SAS
Y. Yes, SSS
Z. Yes, AA





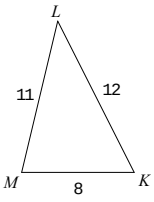
#6

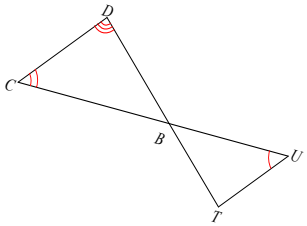
O. Yes, SSS
P. Yes, ASA
Q. Not Similar
R. Yes, AA



#9

L. Not Similar
M. Yes, SSS
N. Yes, AA
O. Yes, SAS





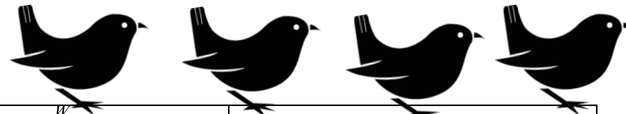
E. Yes, AA
F. Yes, SAS
G. Not Similar
H. Yes, SSS

#12

What was the blackbird doing in the school library?

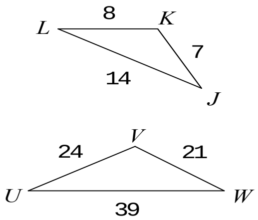
Looking for bookworms!

Riddle time



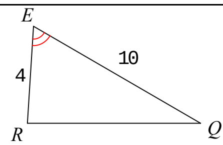
Determine whether each set of triangles is similar and why.

#1

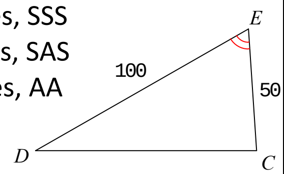


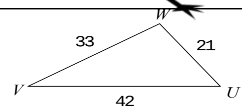
J. Yes, SSS
K. Not Similar
L. Yes, SAS
M. Yes, AA

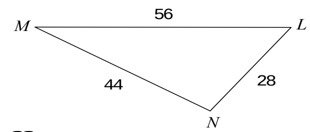
#4



N. Not Similar
O. Yes, SSS
P. Yes, SAS
Q. Yes, AA



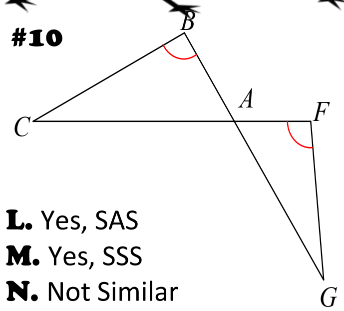




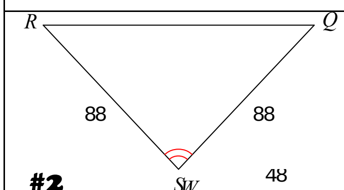
K.Yes, SAS
L. Yes, SSS
M. Yes, AA
N. Not Similar

#7

#10



L. Yes, SAS
M. Yes, SSS
N. Not Similar
O. Yes, AA



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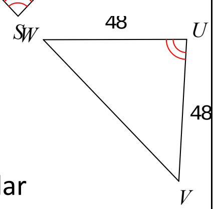
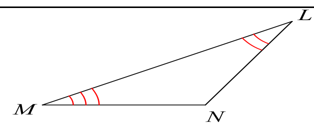
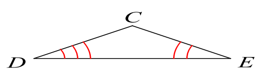


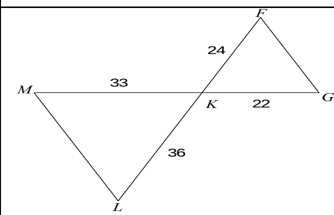
P. Yes, SSS
Q. Yes, AA
R. Yes, SAS
S. Not Similar





P. Not Similar
Q. Yes, SSS
R. Yes, SAS
S. Yes, AA

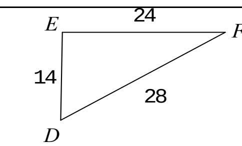
#5



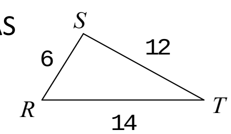
D. Yes, AA
E. Not Similar
F. Yes, SAS
G. Yes, SSS

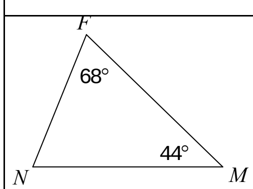
#8

#11



B. Not Similar
C. Yes, SSS
D. Yes, AA
E. Yes, SAS





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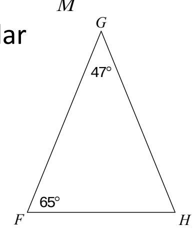
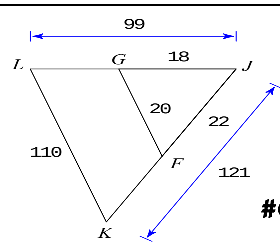
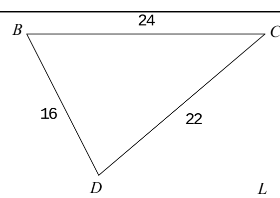


W. Not Similar
X. Yes, SAS
Y. Yes, SSS
Z. Yes, AA



#6

O. Yes, SSS
P. Yes, ASA
Q. Not Similar
R. Yes, AA



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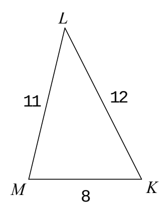
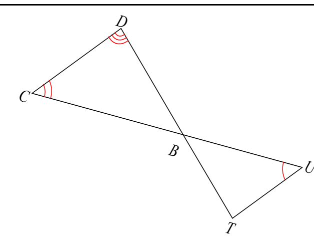


L. Not Similar
M. Yes, SSS
N. Yes, AA
O. Yes, SAS



E. Yes, AA
F. Yes, SAS
G. Not Similar
H. Yes, SSS

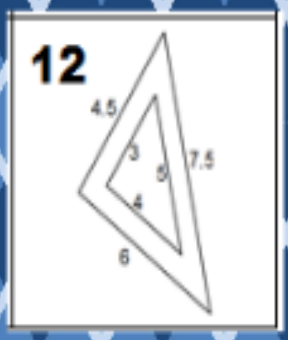
#12

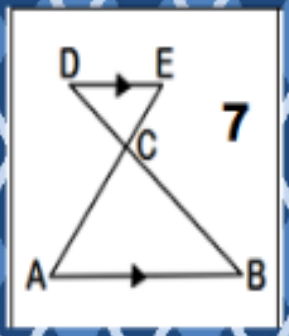
What was the blackbird doing in the school library?

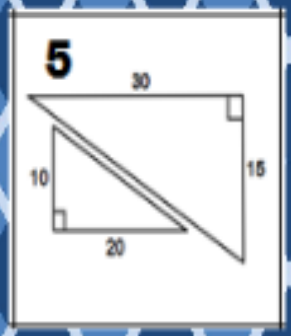
_ _ _ _ I _ _   _ _ _   _ _ _ _ _ _ _ _ _ !

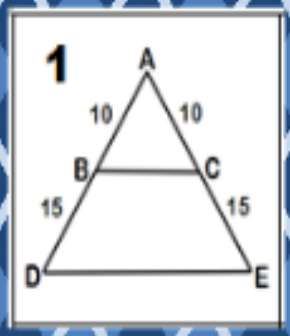
7 6 10 1   4 12   8 10 2   11 10 6 1 3 10 2 9 5

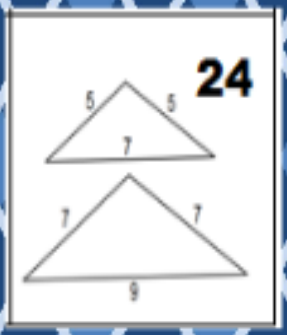
CAN YOU PROVE THE TRIANGLES ARE SIMILAR?

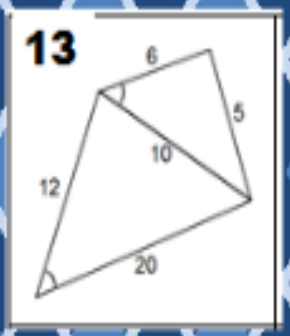


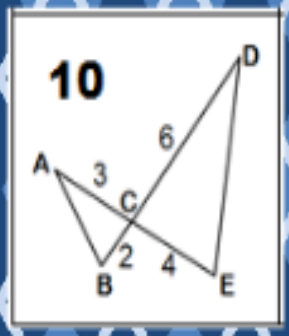


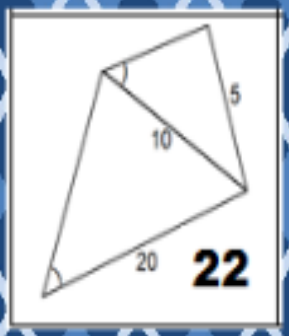












Proving Triangles Similar

By Caryn White

Table of Contents

www.teacherspayteachers.com/Store/Caryn-Loves-Math

Instructions Page

As a Sort

There are 24 cards. Depending on your needs you can use 12, 18, or all 24 cards. The 12 and 18 cards sets are all triangles that can be proven similar. The 24 card set includes triangles that do have enough information to prove or there is something incorrect (sides are not proportional).

I have included an answer sheet for student to record their results. This makes it easier to walk around and check their work.

A key is proved for all forms of the sort.

Differentiation

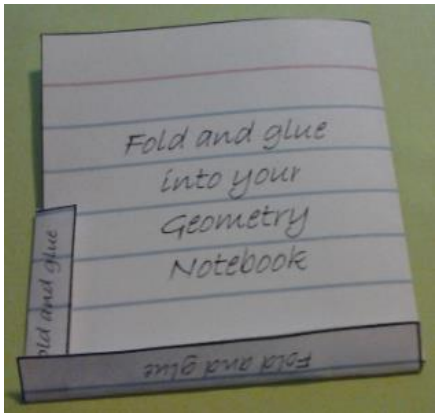
This activity has been designed to allow for differentiation. Students that are struggling or have learning difficulties can be given the shorter version (12 cards). While the average student plays the 18 card set and the advanced learner can be given the 24 set.

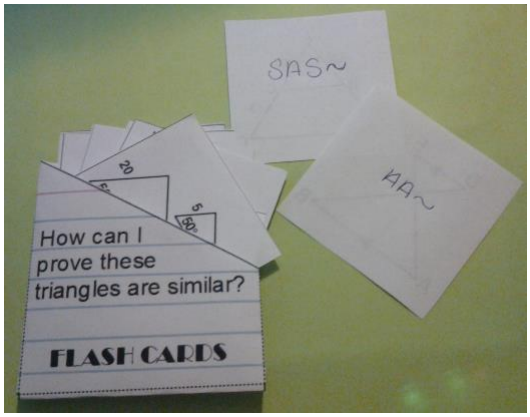
As Flash Cards:

Print the cards and the answers front to back. I laminate mine for extended use. Students can then quiz each other during class.

For Interactive Math Notebook (or Math Journal)

I print the sort on colored sheets. Students cut out the square and decide which method can be used to prove the 2 triangles are similar. I have included a pocket for student to place their place cards in. Student glue the pocket into their math notebook and place the flash card in it for later practice.



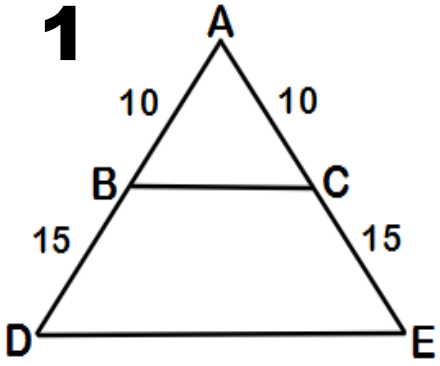


Possible Uses:

- ✓ Bellwork
- ✓ Check for understanding
- ✓ Alternative to Homework
- ✓ Extra Practice
- ✓ Activity for interactive notebook

Sort: All can be proven similar

1



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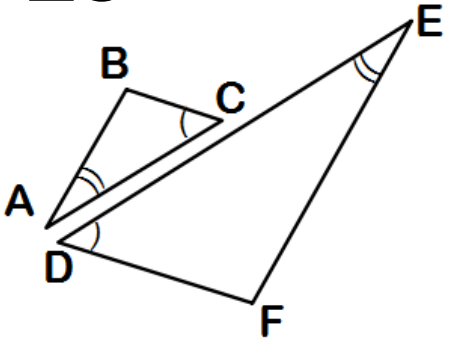

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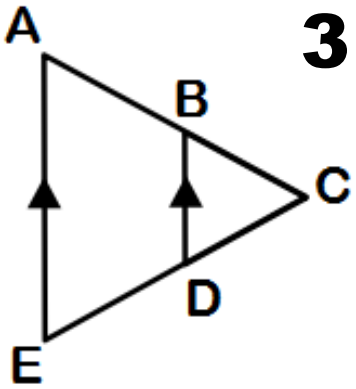

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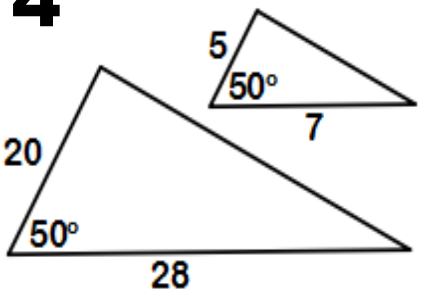

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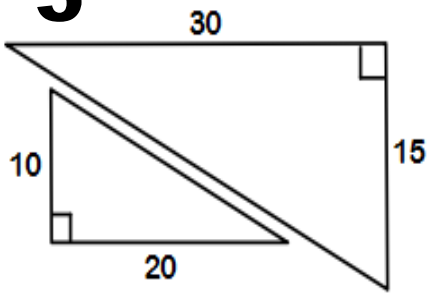
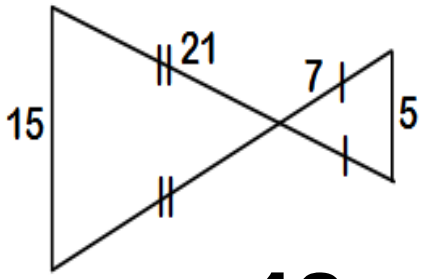
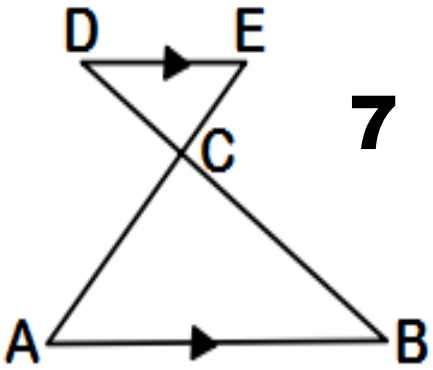




19

7



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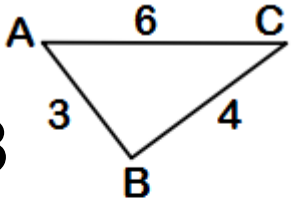

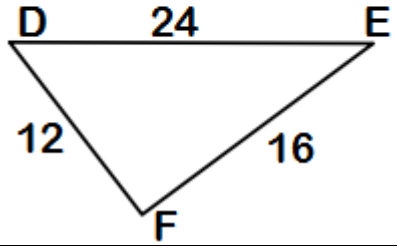

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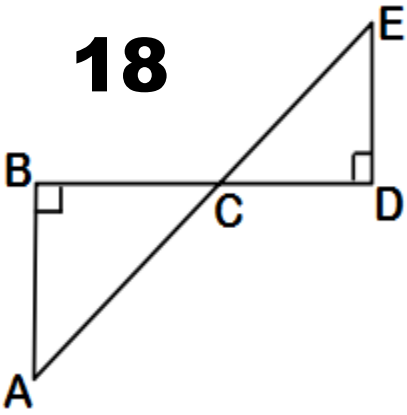

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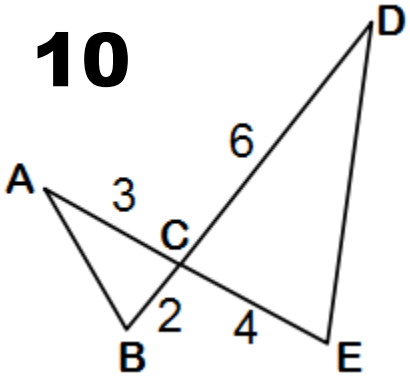

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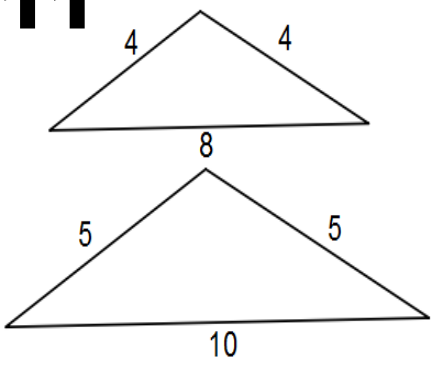

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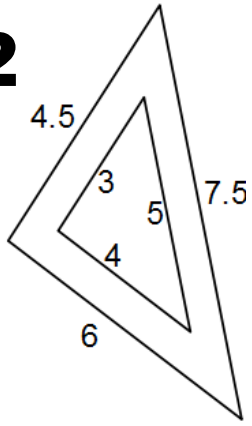
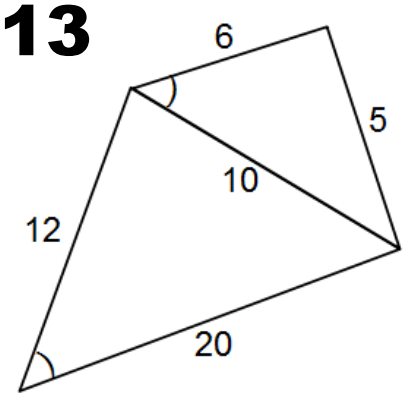


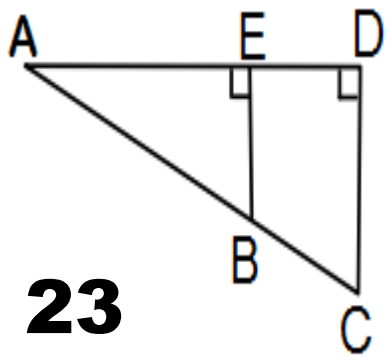
Flash Cards Back (reverse order for front to back printing)

AA~	AA~	SAS~
SSS~	SAS~	SAS~
AA~	SSS~	AA~
SSS~	SSS~	SAS~

Includes Triangles with not enough info to prove similar

13





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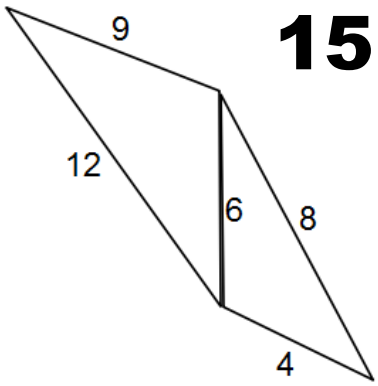

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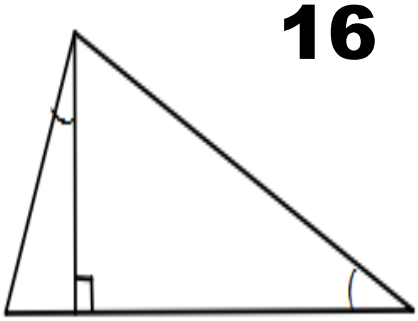

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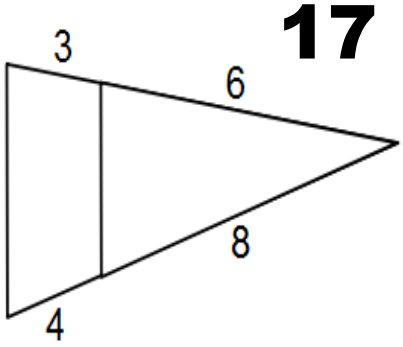

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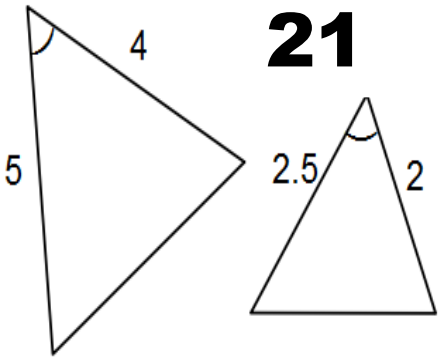

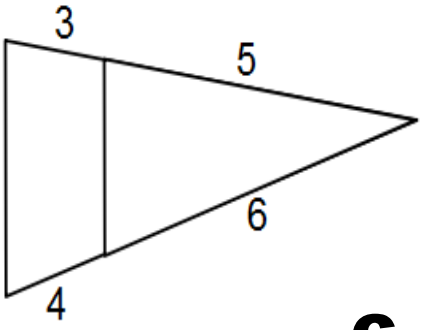

6

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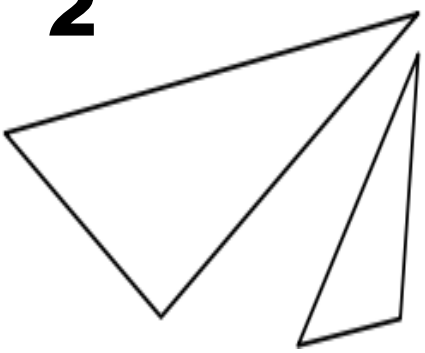

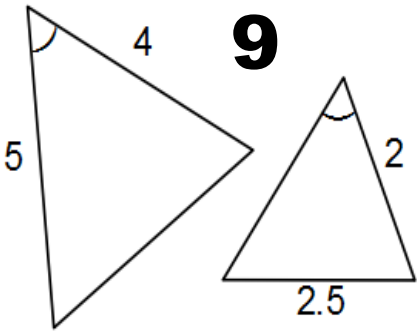

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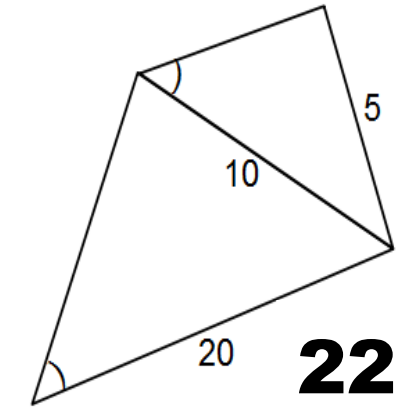

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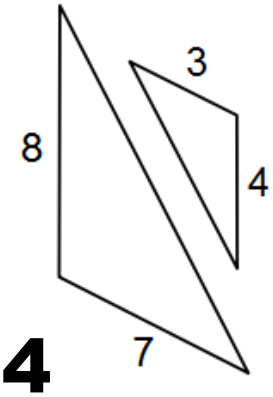

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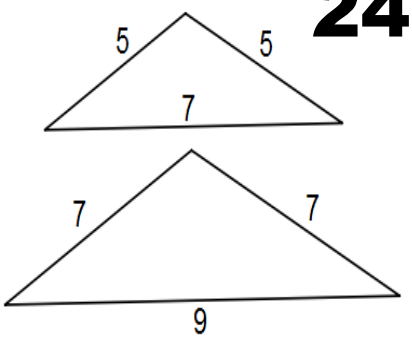


Flash Cards Back

SSS~	AA~	SSS~
SAS~	SAS~	AA~
Not Similar	Not Similar	Not Similar
Not Similar	Not Similar	Not Similar

Student Answer Sheet – Version A

Name _____
Period _____

First complete the sort by decided which theorem or postulate can you used to prove the triangles are similar Then list the number of the card below.

AA~	SAS~	SSS~

Name _____
Period _____

First complete the sort by decided which theorem or postulate can you used to prove the triangles are similar Then list the number of the card below.

AA~	SAS~	SSS~

Name _____
Period _____

First complete the sort by decided which theorem or postulate can you used to prove the triangles are similar Then list the number of the card below.

AA~	SAS~	SSS~

Student Answer Sheet – Version B

Name _____
Period _____

First complete the sort by decided which theorem or postulate can you used to prove the triangles are similar Then list the number of the card below.

AA~	SAS~	SSS~	Can't prove similarity

Name _____
Period _____

First complete the sort by decided which theorem or postulate can you used to prove the triangles are similar Then list the number of the card below.

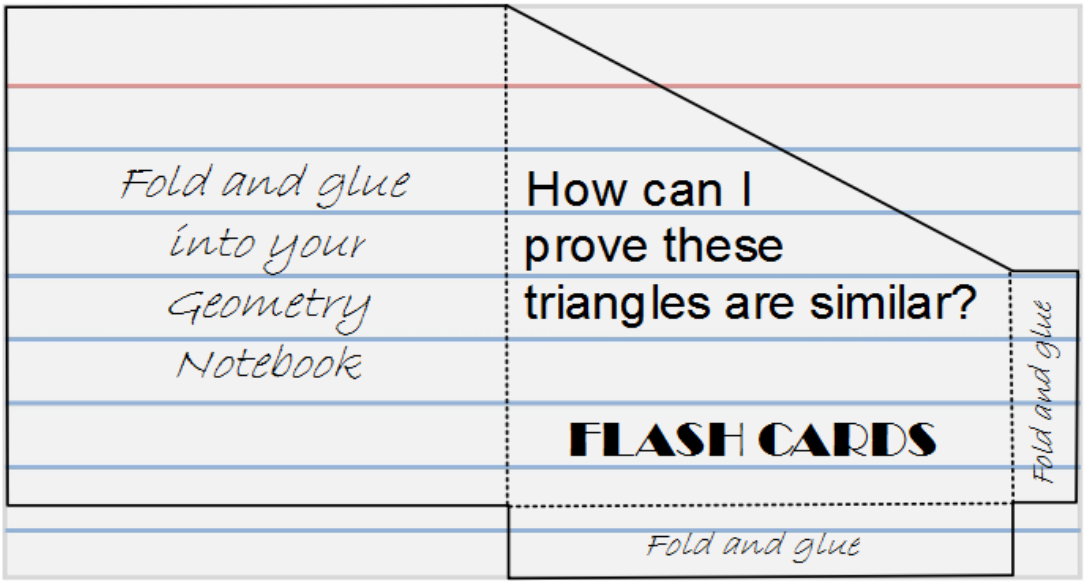
AA~	SAS~	SSS~	Can't prove similarity

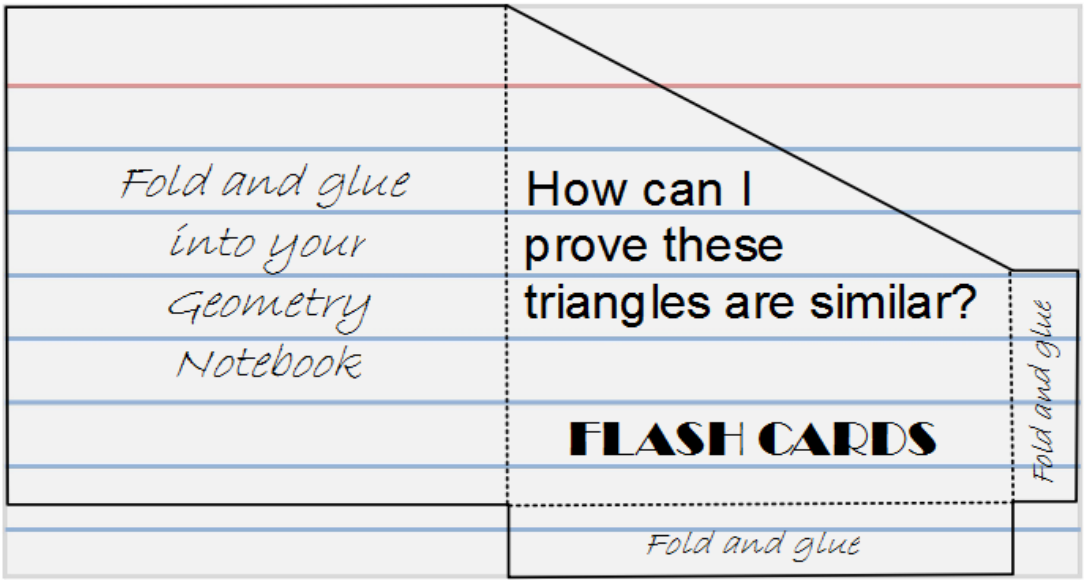
Name _____
Period _____

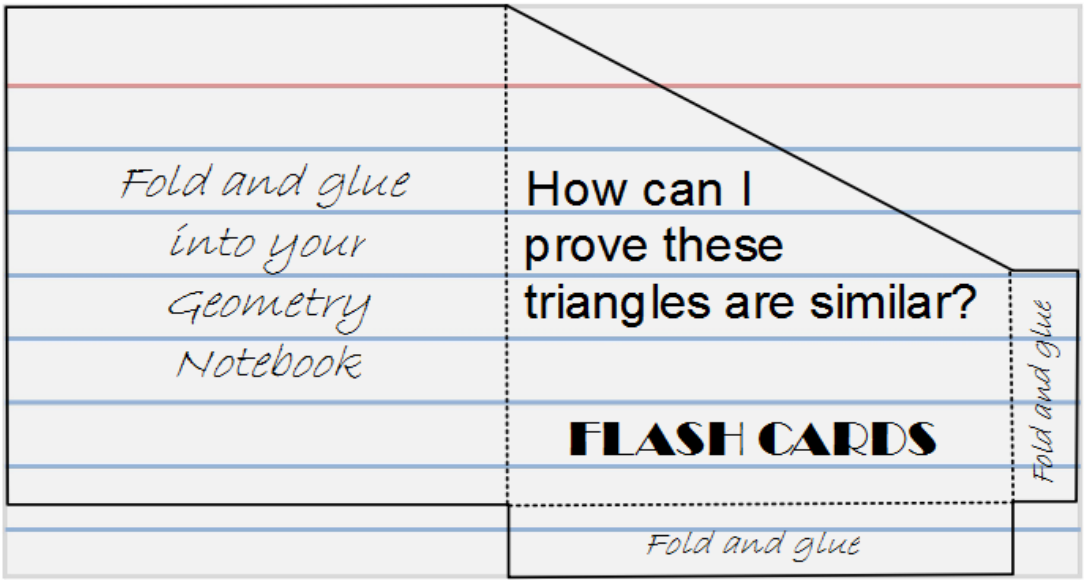
First complete the sort by decided which theorem or postulate can you used to prove the triangles are similar Then list the number of the card below.

AA~	SAS~	SSS~	Can't prove similarity

Pocket for sort







Keys

Key to sort using only first 12 cards

AA~	SAS~	SSS~
3,7,18,20	1,4,5,10	8,11,19,12

Key to sort using only first 18 cards

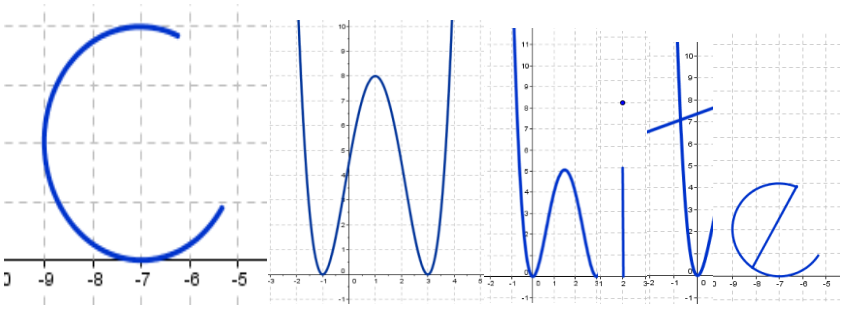
AA~	SAS~	SSS~
3,7,16,18,20,23	1,4,5,10,17,21	8,11,13,15,19,12

Key using all 24 cards

AA~	SAS~	SSS~	Can't prove similarity
3,7,16,18,20,23	1,4,5,10,17,21	8,11,13,15,19,12	2,6,9,14,22,24

Credits Page

All graphs were designed by Caryn White



Backgrounds were designed by …

Thanks for your purchase.

Caryn White

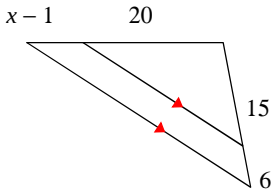
www.teacherspayteachers.com/Store/Caryn-Loves-Math

AGS Name_____

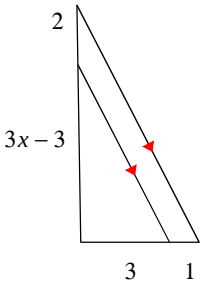
Triangle Proportions - Station 6

Solve for *x*.

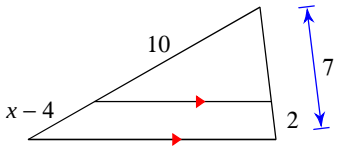
1)



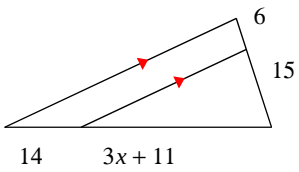
2)



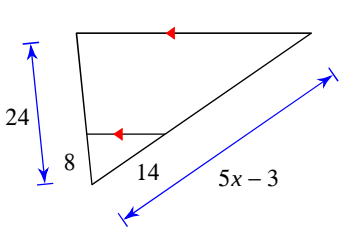
3)



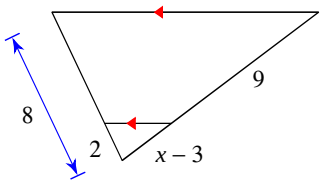
4)



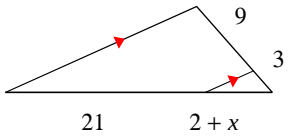
5)



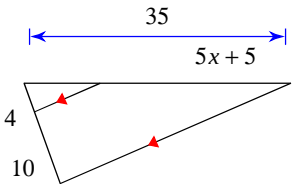
6)



7)



8)



AGS Name_____

Station 7 - Dilations

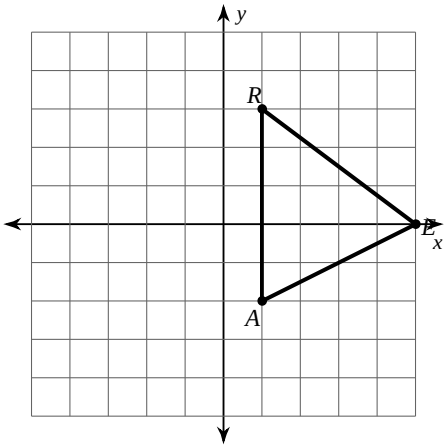
Date_____

Find the coordinates of the vertices of each figure with the origin as the center of dilation.

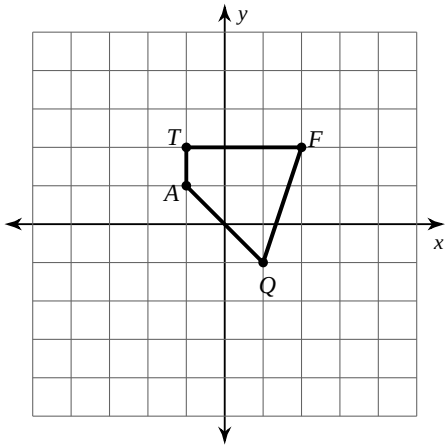
1) dilation of 2
$U(-1, -2)$, $C(1, 2)$, $L(2, -2)$

2) dilation of 2.5
$L(-1, -1)$, $P(1, 2)$, $H(0, -2)$

3) dilation of 0.5

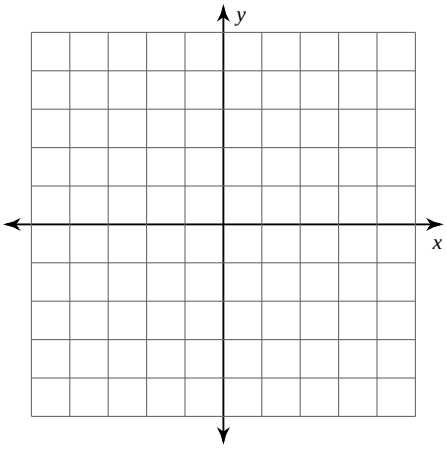


4) dilation of 2

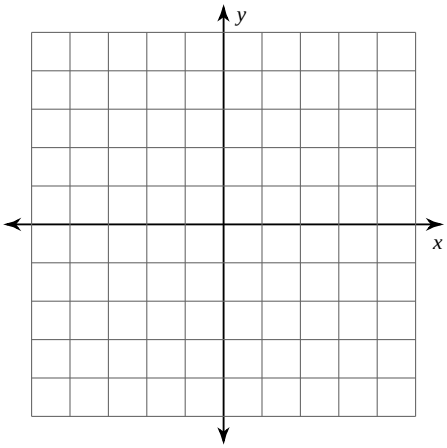


Graph the image of the figure with the origin as the center of dilation.

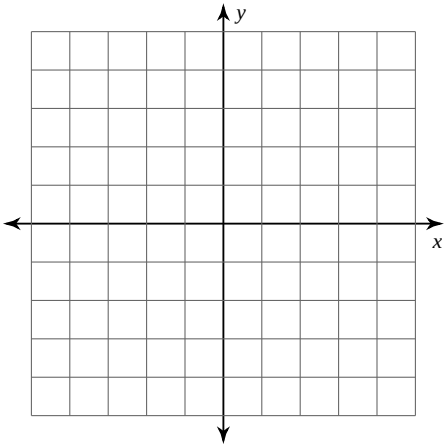
5) dilation of 2
$V(-1, 0)$, $L(1, 2)$, $D(1, -2)$



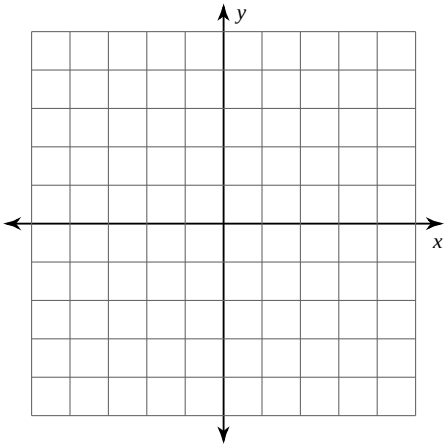
6) dilation of 0.5
$H(-2, -2)$, $I(0, 2)$, $Z(3, 0)$, $N(2, -2)$



7) dilation of 1.5
$V(0, -2)$, $G(-2, 1)$, $M(2, 2)$, $I(3, -2)$

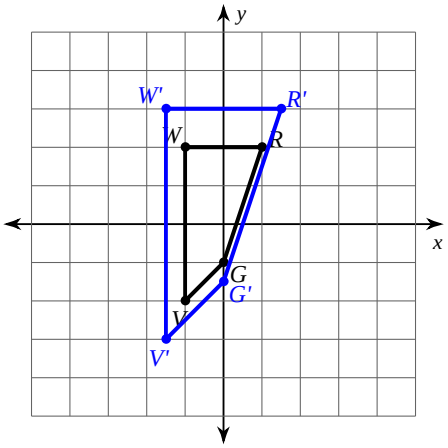


8) dilation of 2
$W(-1, 1)$, $B(1, 2)$, $T(2, -1)$

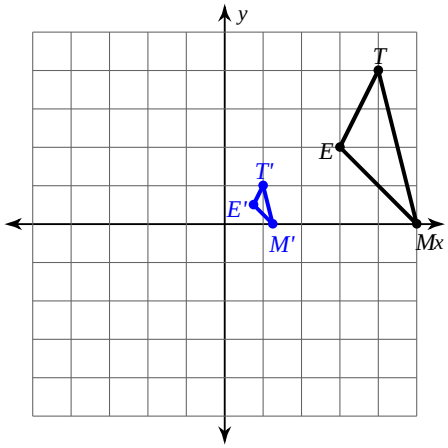


Write a rule to describe each transformation.

9)

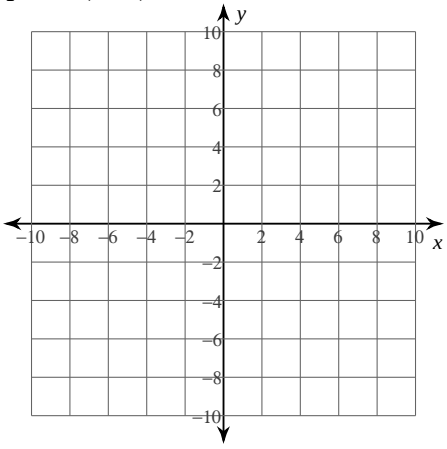


10)



Dilate the following figures with the specified point as the center.

11) Triangle ABC has vertices A(7, 4), B(5, 0) and C(4, 2) by a scale factor of two, centered at the point (9, 2)



12) Triangle ABC has vertices A(8, -3), B(-6, -1) and C(0, 7) by a scale factor of ½, centered at point C.