Key

Date	Topic/Assignment
Tuesday **January 5**	Angles of Triangles 1. 5-2 angles of Triangles WS (pages 1-2) 2. Chapter Practice Worksheet (page 3)
Wednesday **January 6**	Dilations 1. Notes (pages 4-6) 2. 6.1 Practice WS (pages 7-8)
Thursday **January 7**	Proving Triangles are Congruent 1. Notes (pages 9-13) 2. Congruent WS 1 (page 14) 3. Congruent WS 2 (page 15-~~26~~)
Friday **January 8**	More with proving triangles are congruent 1. 3 more worksheets (pages 17-19)
Monday **January 11**	**Quick QUIZ** Triangle Congruency Proofs 1. # 1-8 (pages 20-23) 2. find easy proof worksheet (page 24)
Tuesday **January 12**	Triangle Congruency Proofs 1. find easy worksheet of proofs (page 25)
Wednesday **January 13**	Proportions with Similarity 1. Similar Triangles Rectangles Ratios Notes (pages 26-27) 2. Proportions with similarity – basic practice (pages 28-29) 3. Proportions with similarity HW (pages 30-31)
Thursday **January 14**	Similar Triangles - Proving Triangles Similar Notes (pages 32-33) - Proving Triangles Similar WS (pages 34-37)
Friday **January 15**	Mid-segments and Proportions of Triangles - Mid-segment and Proportions Notes (pages 38-43) - Triangle Mid-segment Homework (pages 44-45) - Mid-segment of a Triangle HW II (pages 46-47)
Monday **January 18**	No School!!! Go do something good in your community!
Tuesday **January 19**	Review Stations
Wednesday **January 20**	**TEST**

* Cut corners off △ & Show add up to a line = 180°

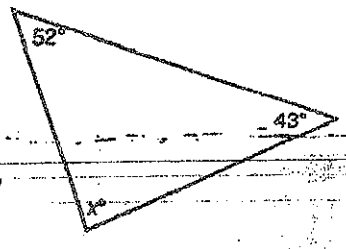
5-2 Practice

NAME _____ DATE _____ PERIOD _____

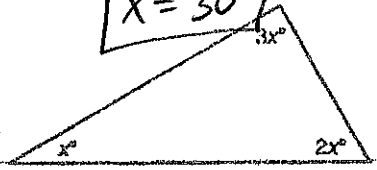
Student Edition
Pages 193–197

Angles of a Triangle

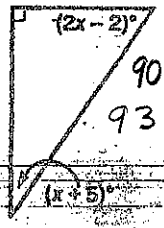
Find the value of each variable.

1. 

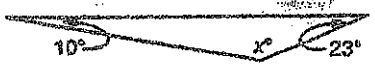
180
−52
−43
$x = 85°$

2. 

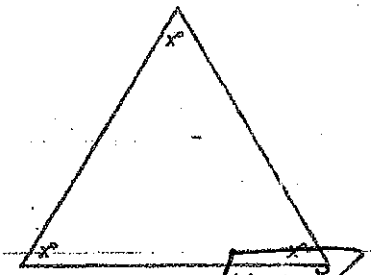
$6x = 180$
$x = 30°$

3. 

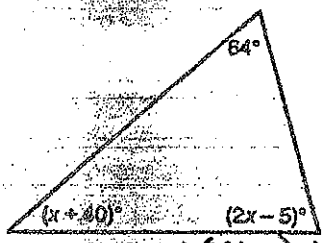
$90 + (2x-2) + (x+5) = 180$
$93 + 3x = 180$
$3x = 87$
$x = 29°$

4. 

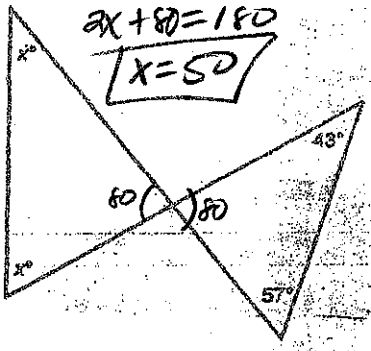
$180 = 10 + x + 23$
$180 = x + 33$
$x = 147°$

5. 

$3x = 180$ $x = 60°$

6. 

$180 = 64 + (x+40) + (2x-5)$
$180 = 99 + 3x$ $3x = 81$
$x = 27°$

7. 

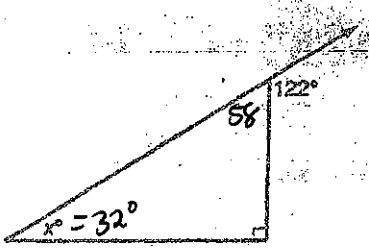
$2x + 80 = 180$
$x = 50$

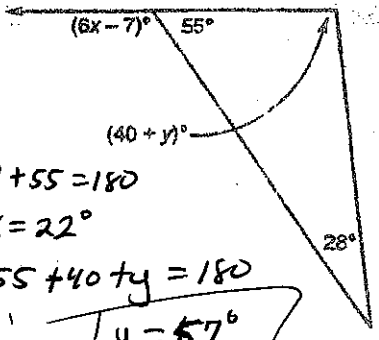
8. 

$x = 25$
$y = 90 - 65 = 25°$
$z = 65°$

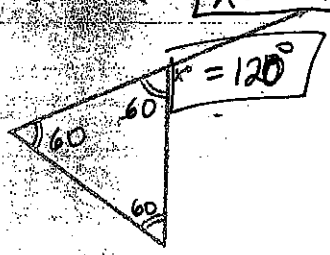
9. 

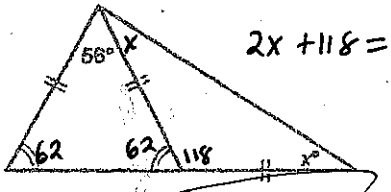
$180 = 2y + 44$
$\frac{2y}{2} = \frac{136}{2}$
$y = 68°$
$x = 112°$

10. 

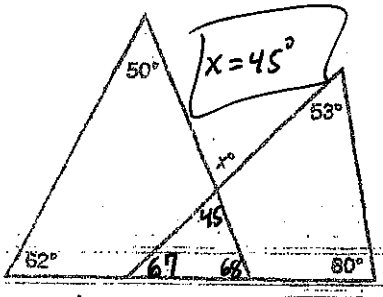
11. 

$6x - 7 + 55 = 180$
$x = 22°$
$28 + 55 + 40 + y = 180$
$y = 57°$

12. 

13. 

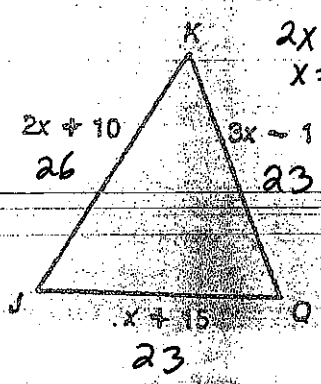
$2x + 118 = 180$
$x = 31°$

14. 

Name _____ Extra Practice
(Lessons 4-1 and 4-2)

1. $\triangle JKQ$ is isosceles with base $\overline{JK}$. Find x, JK, KQ, JQ, and the perimeter of $\triangle JKQ$.

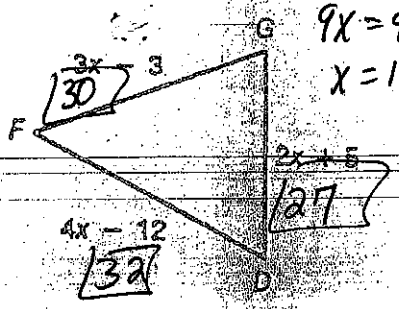
$3x-1 = x+15$
$2x = 16$
$x = 8$



$P = 72$

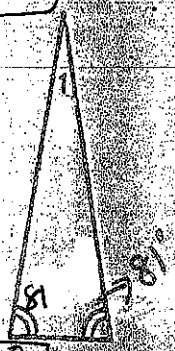
2. The perimeter of $\triangle DFG$ is 89. Find x, DF, FG, and DG.

$9x - 10 = 89$
$9x = 99$
$x = 11$

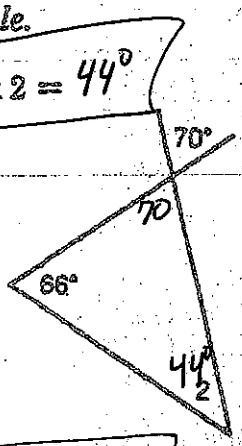


Find the measure of each numbered angle.

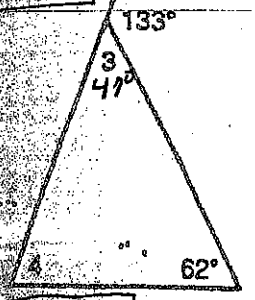
3. $m\angle 1 = 18^\circ$



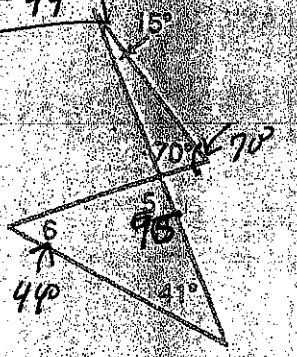
4. $m\angle 2 = 44^\circ$



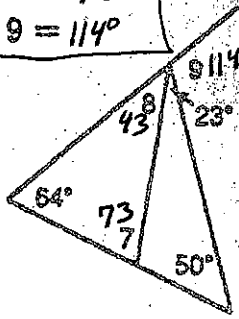
5. $m\angle 3 = 47^\circ$
$m\angle 4 = 71^\circ$



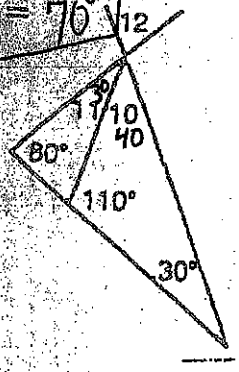
6. $m\angle 5 = 95^\circ$
$m\angle 6 = 44^\circ$



7. $m\angle 7 = 73^\circ$
$m\angle 8 = 43^\circ$
$m\angle 9 = 114^\circ$



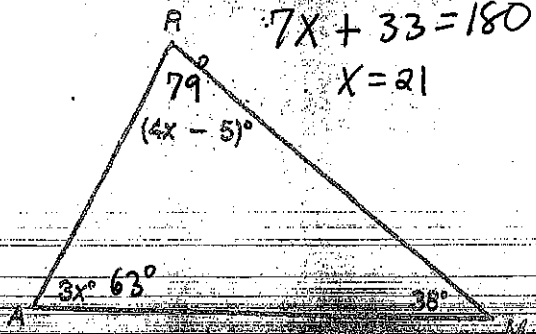
8. $m\angle 10 = 40^\circ$
$m\angle 11 = 30^\circ$
$m\angle 12 = 70^\circ$



Find the measures indicated.

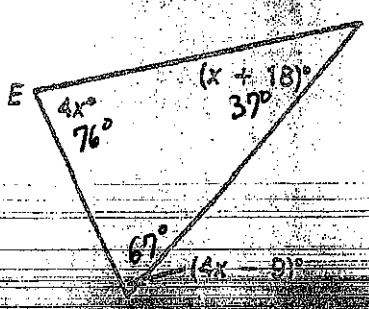
9. Find x, $m\angle A$, and $m\angle R$.

$7x + 33 = 180$
$x = 21$



10. Find x, $m\angle E$, and $m\angle G$.

$9x + 9 = 180$
$x = 19$



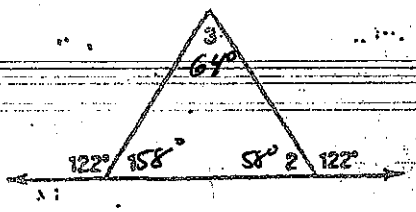
2

Chapter Practice Worksheet

Name _____

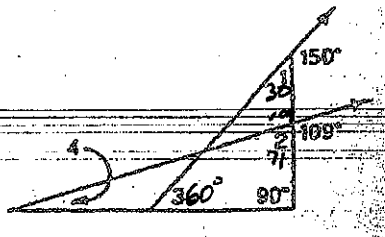
Find the measure of each numbered angle.

1.



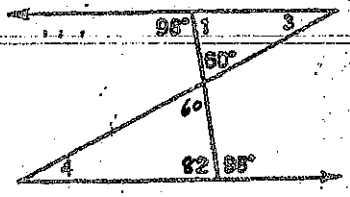
$m\angle 1 = \underline{58^\circ}$, $m\angle 2 = \underline{58^\circ}$, $m\angle 3 = \underline{64^\circ}$

2.



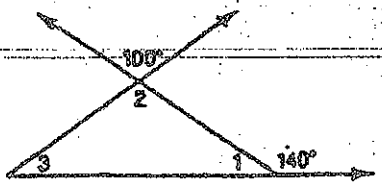
$m\angle 1 = \underline{30^\circ}$, $m\angle 2 = \underline{71^\circ}$,
$m\angle 3 = \underline{60^\circ}$, $m\angle 4 = \underline{19^\circ}$

3.



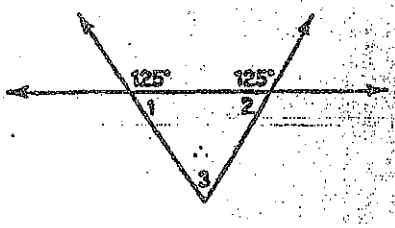
$m\angle 1 = \underline{82^\circ}$, $m\angle 2 = \underline{82^\circ}$,
$m\angle 3 = \underline{38^\circ}$, $m\angle 4 = \underline{38^\circ}$

4.



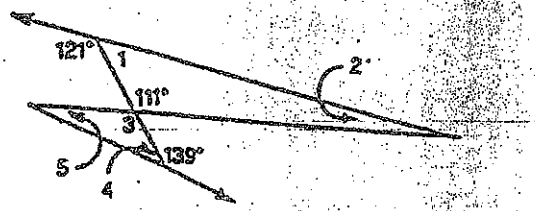
$m\angle 1 = \underline{40}$, $m\angle 2 = \underline{100}$, $m\angle 3 = \underline{40^\circ}$

5.



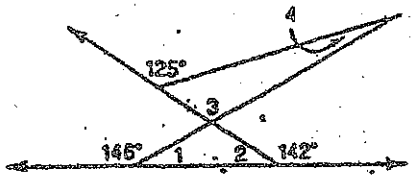
$m\angle 1 = \underline{55^\circ}$, $m\angle 2 = \underline{55^\circ}$, $m\angle 3 = \underline{70^\circ}$

6.



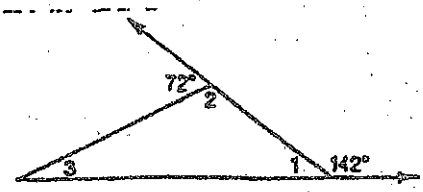
$m\angle 1 = \underline{59^\circ}$, $m\angle 2 = \underline{10^\circ}$,
$m\angle 3 = \underline{111^\circ}$, $m\angle 4 = \underline{41^\circ}$, $m\angle 5 = \underline{28^\circ}$

7.



$m\angle 1 = \underline{34}$, $m\angle 2 = \underline{38^\circ}$,
$m\angle 3 = \underline{108^\circ}$, $m\angle 4 = \underline{17^\circ}$

8.



$m\angle 1 = \underline{38}$, $m\angle 2 = \underline{108}$, $m\angle 3 = \underline{34^\circ}$

DILATIONS

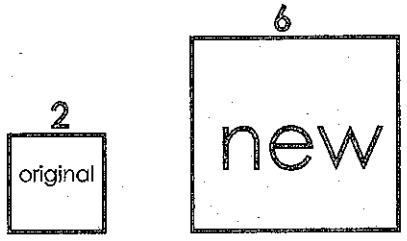
Scale Factor – the ratio of a new image to its original image

- The ratio of corresponding sides

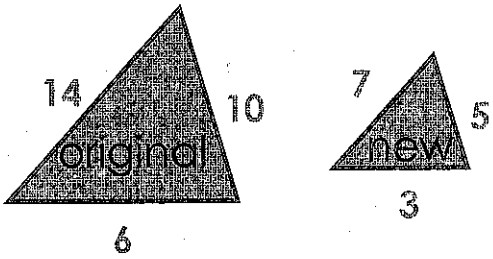
Scale Factor

- When scale factor is greater than 1, the shape gets *bigger* (enlargement).
- When scale factor is less than 1, but greater than 0, the shape gets *smaller* (reduction).

SCALE FACTOR.



$$\frac{6}{2} = \frac{3}{1}$$



$$\frac{5}{10} = \frac{1}{2}$$

Find the coordinates of the dilation image for the given scale factor, *k*.

Example 1:

$G(0, -2)$, $H(1, 3)$, and $I(4, 1)$; $k = 2$

All you do is multiply *k* to (x, y).

G'(-4,), H'(6,), and I'(2,)

G'(0, -2) H'(2, 6) I'(8, 2)

Find the coordinates of the dilation image for the given scale factor, *k*.

Example 2:

$L(8, -8)$, $N(0, 16)$, and $M(4, 5)$; $k = 1/4$

All you do is multiply *k* to (x, y).

L'(-2,), N'(0 4,), and M'(5/4)

L'(2, -2) N'(0, 4) M'(1, 5/4)

Name_____ Date_____ Class_____

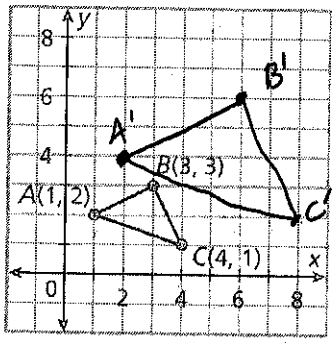
CCGPS Geometry – 6.1 Practice

Similarity and Transformations

Apply the dilation *D* to the polygon with the given vertices. Describe the dilation as an enlargement or a reduction.

1. D: $(x, y) \rightarrow (2x, 2y)$

   $A(1, 2)$, $B(3, 3)$, $C(4, 1)$



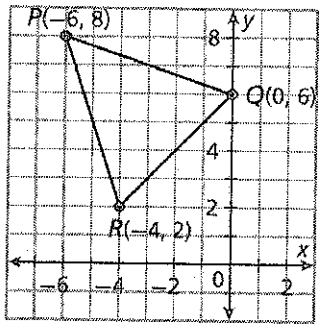
A' (2, 4)

B' (6, 6)

C' (8, 2)

2. D: $(x, y) \rightarrow (\frac{1}{2}x, \frac{1}{2}y)$

   $P(-6, 8)$, $Q(0, 6)$, $R(-4, 2)$



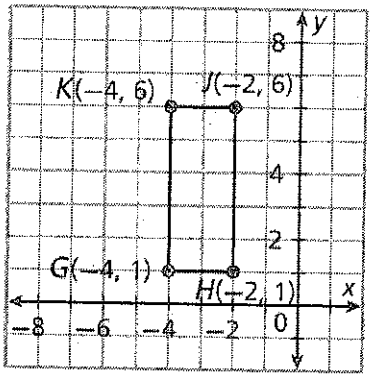
P' (−3, 4)

Q' (0, 3)

R' (−2, 1)

3. D: $(x, y) \rightarrow (1.5x, 1.5y)$

   $G(-4, 1)$, $H(-2, 1)$, $J(-2, 6)$, $K(-4, 6)$



G' (−6, 1.5)

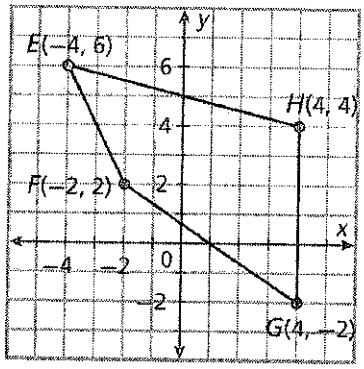
H' (−3, 1.5)

J' (−3, 9)

K' (−6, 9)

4. D: $(x, y) \rightarrow (0.75x, 0.75y)$

   $E(-4, 6)$, $F(-2, 2)$, $G(4, -2)$, $H(4, 4)$



E' (−3, 4.5)

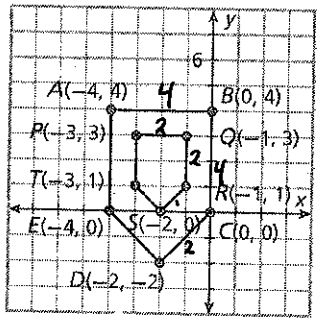
F' (−1.5, 1.5)

G' (3, −1.5)

H' (3, 3)

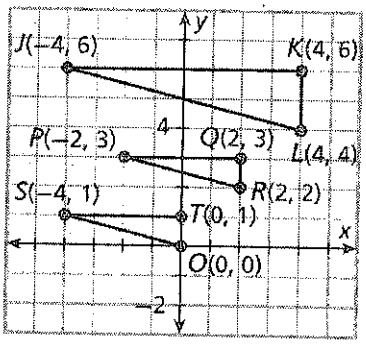
Determine whether the polygons with the given vertices are similar. ***Hint: check the lengths of their sides.***

5. $A(-4, 4)$, $B(0, 4)$, $C(0, 0)$, $D(-2, -2)$, $E(-4, 0)$; $P(-3, 3)$, $Q(-1, 3)$, $R(-1, 1)$, $S(-2, 0)$, $T(-3, 1)$



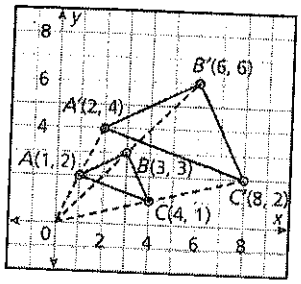
yes,

6. $J(-4, 6)$, $K(4, 6)$, $L(4, 4)$; $P(-2, 3)$, $Q(2, 3)$, $R(2, 2)$; $S(-4, 1)$, $T(0, 1)$, $O(0, 0)$

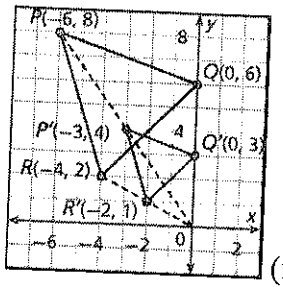


Name _____ Date _____ Class _____

Standard MCC9-12.G.SRT.1:
A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.

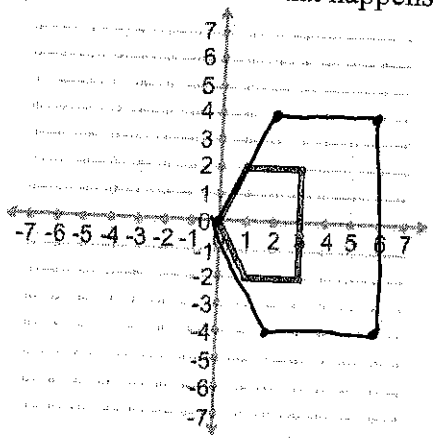


(from #1 above)



(from #2 above)

What if the center of the dilation passes through one of the sides of the triangle? Draw a dilation with a factor of 2 to see what happens.



(0,0) → (0,0)
(1,2) (2,4)
(3,2) (6,4)
(3,-2) (6,-4)
(1,-2) (2,-4)

SIMILARITY OF DIFFERENT SHAPES:

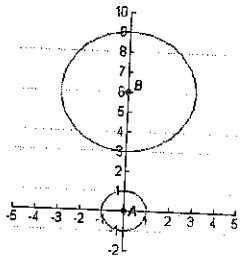
Squares? YES or NO

Rectangles? YES or NO

Equilateral Triangle? YES or NO

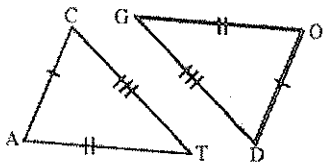
Isosceles Triangle? YES or NO

Circles? YES or NO



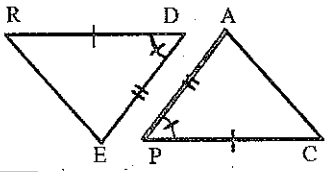
Proving Triangles are Congruent!!

Ex. 1



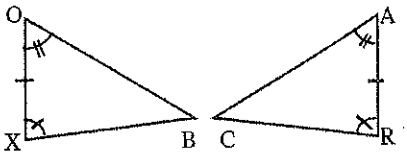
$\Delta CAT \cong \Delta DOG$
by SSS

Ex 2



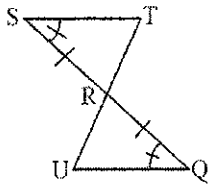
$\Delta RED \cong \Delta CAP$
by SAS

Ex 3



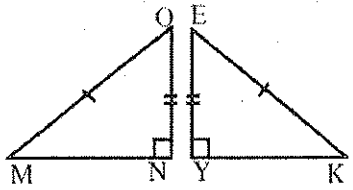
$\Delta BOX \cong \Delta CAR$
by ASA

Ex 4



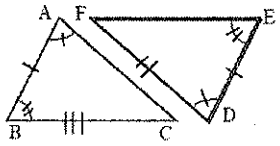
$\Delta STR \cong \Delta QUR$
by ASA

Ex 5



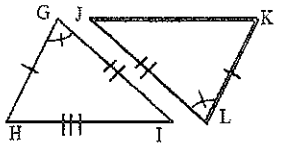
$\Delta MON \cong \Delta KEY$
by HL

Ex 6



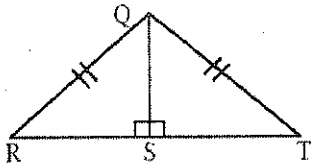
$\Delta ABC \cong \Delta DEF$
by ASA

Ex 7



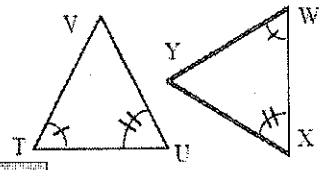
$\Delta GHI \cong \Delta LKJ$
by SAS

Ex 8



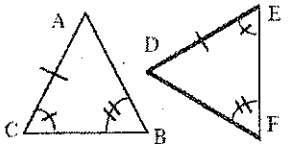
$\Delta RSQ \cong \Delta TSQ$
by HL

Ex 9



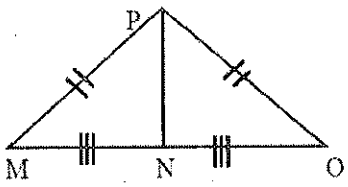
No not enough info

Ex 10



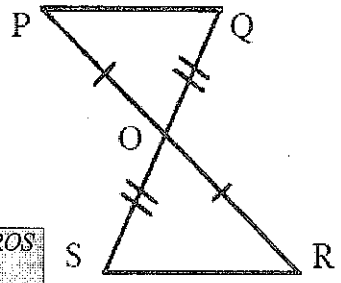
$\Delta ABC \cong \Delta DFE$
by AAS

Ex 11



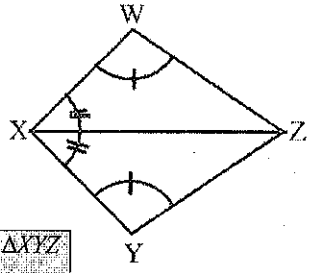
$\Delta MNP \cong \Delta ONP$
by SSS

Ex 12



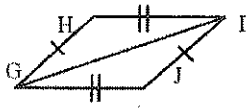
$\Delta POQ \cong \Delta ROS$
by SAS

Ex 13



$\Delta XWZ \cong \Delta XYZ$
by AAS

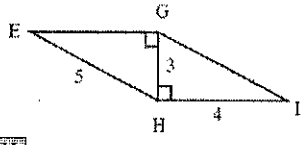
Ex 14



$\Delta GHI \cong \Delta IJG$
by SSS

Ex 15

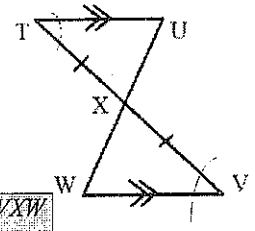
Hint: Use Pythagorean Thm



$\Delta GHE \cong \Delta HGI$
by SSS or HL

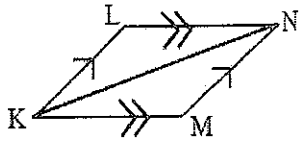
Ex 16

Hint: TU is parallel to WV and TV is the transversal



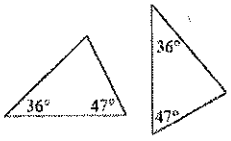
$\Delta TXU \cong \Delta VXW$
by ASA

Ex 17



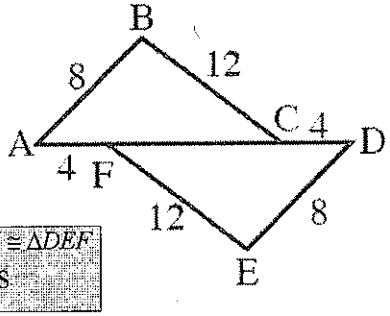
$\Delta LKM \cong \Delta MNK$
by ASA

Ex 18



Not congruent
AAA does not work

Ex 19



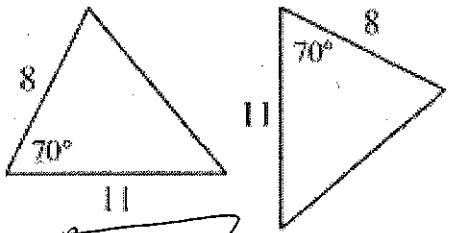
$\Delta ABC \cong \Delta DEF$
by SSS

Congruent Triangles WS 1 Name:_____

Use your triangle congruence conjectures to determine if the following pairs of triangles must be congruent.

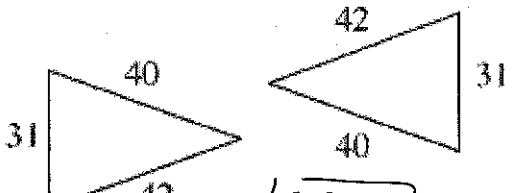
Note: The Diagrams are not necessarily drawn to scale.

a.



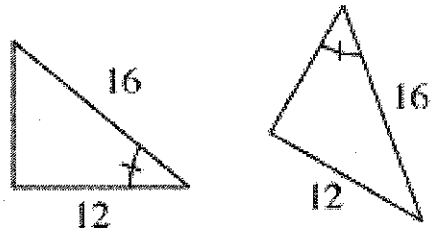
SAS

b.



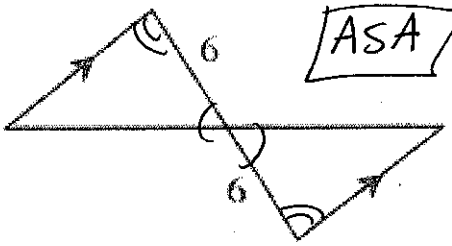
SSS

c.



NO

d.

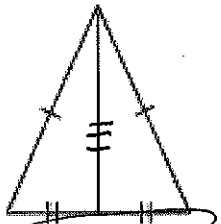


ASA

e.

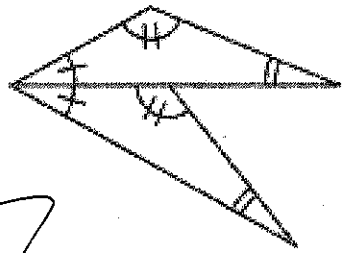
AAS or ASA

f.



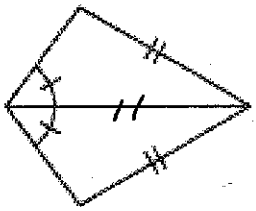
SSS

g.



NO

h.



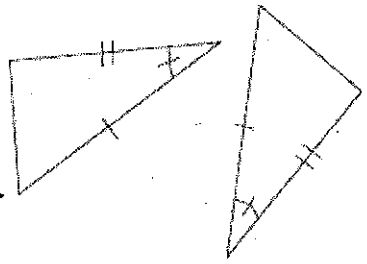
NO ASS

Congruent Triangles WS 2 Name:_____

List your Five Triangle Congruence Shortcuts:

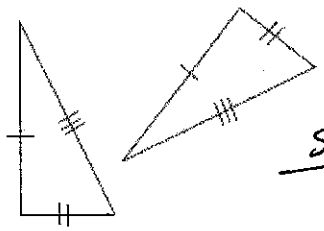
Using your congruence shortcuts, decide if the triangles are congruent. Write the shortcut you used.

a)



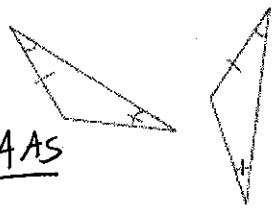
SAS

b)



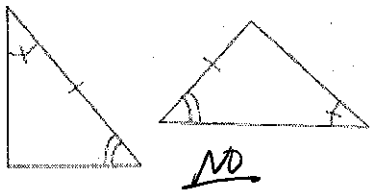
SSS

c)



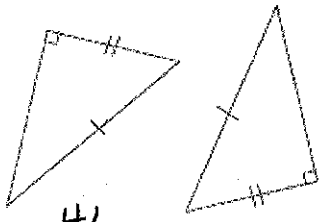
~~AAA~~ AAS

d)



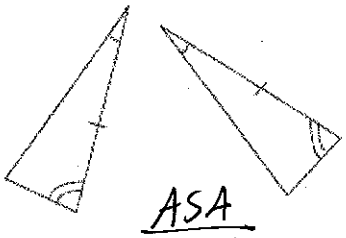
NO

e)



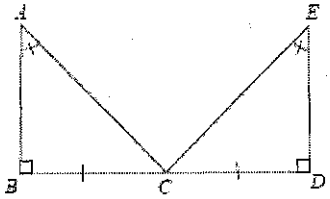
HL

f)



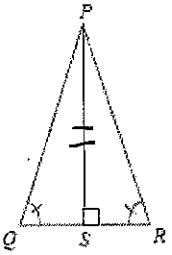
ASA

1.



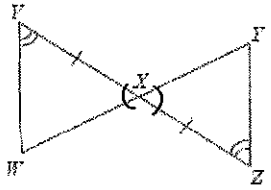
AAS

2.



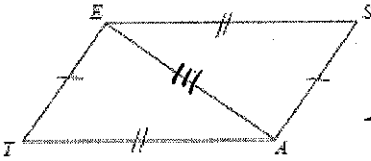
AAS

3.



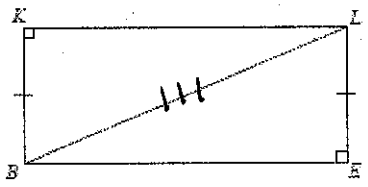
ASA

4.



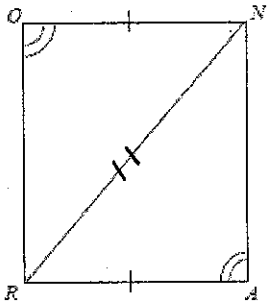
SSS

5.



HL

6.

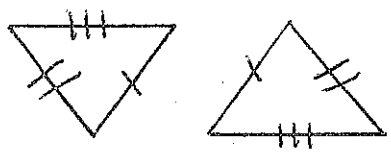


NO

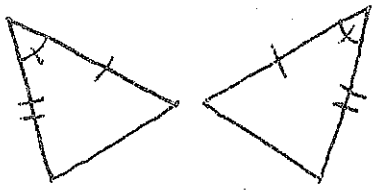
INFORMAL GEOMETRY
SSS AND SAS

NAME_____

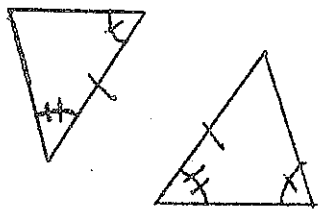
Answer as SSS, SAS, or NO.

① 

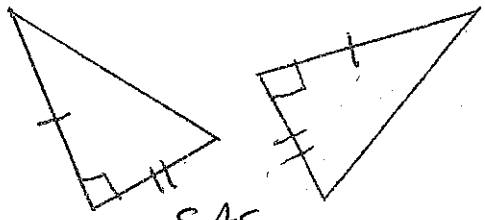
SSS

② 

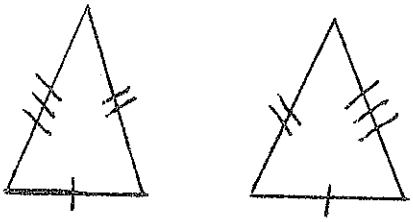
SAS

③ 

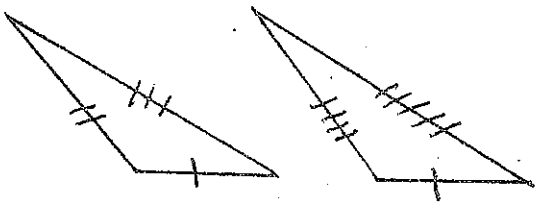
NO

④ 

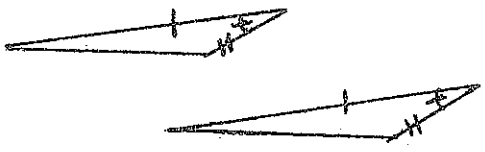
SAS

⑤ 

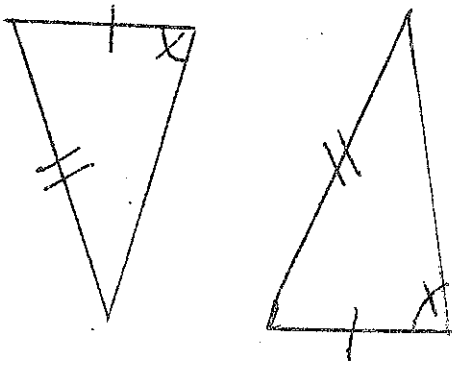
SSS

⑥ 

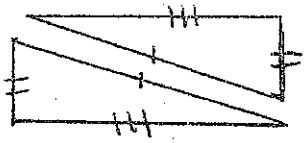
NO

⑦ 

SAS

⑧ 

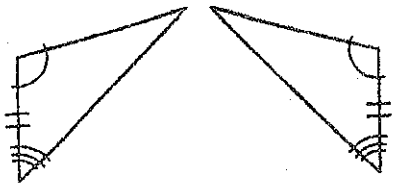
NO

⑨ 

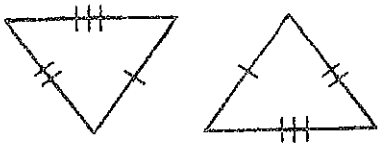
SSS

Name the Congruence Rule!

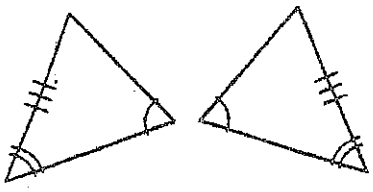
re the triangles in each pair congruent? If so, write SSS, SAS, ASA, AAS, or HL to show ow you proved congruence. If you cannot prove congruence, write NOT.

1. 

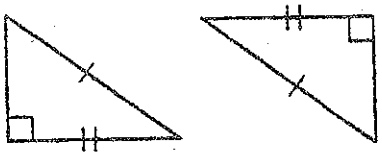
ASA

2. 

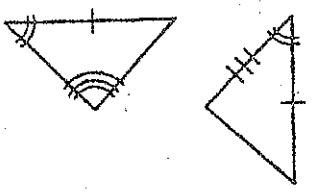
SSS

3. 

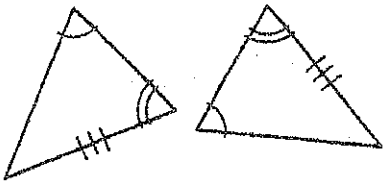
AAS

4. 

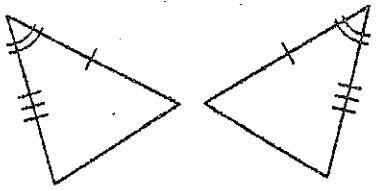
HL

5. 

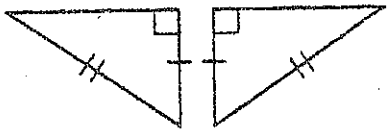
NO

6. 

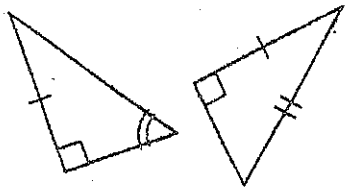
AAS

7. 

SAS

8. 

HL

9. 

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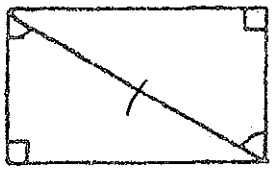
10. 

ASA

≅ △s Worksheet 2

Name _____

1. 

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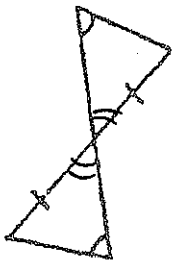
2. 

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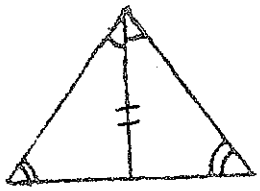
3. 

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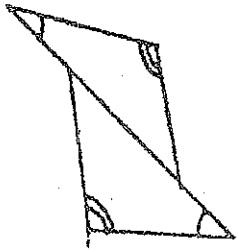
4. 

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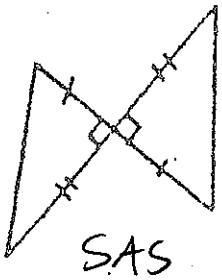
5. 

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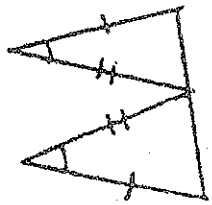
6. 

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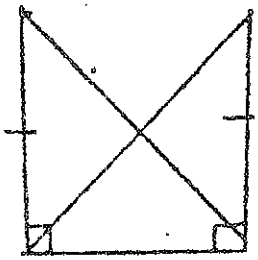
7. 

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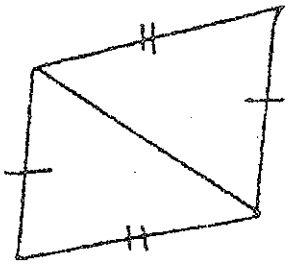
8. 

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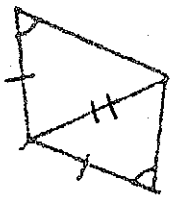
9. 

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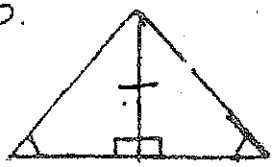
10. 

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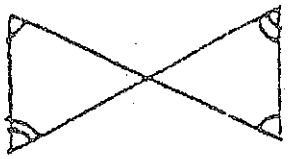
11. 

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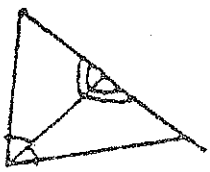
12. 

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