**Geometry Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Congruent Triangles Block:\_\_\_\_\_\_\_\_\_**

**Be sure to show all of your work. Unjustified Responses will not receive full credit.**

1) Given the figure,

$$2x+3$$

1

$$4x-7$$

$$113°$$

$$67°$$

2

 (a) Find x = \_\_\_\_\_\_\_\_\_

 (b) Find $m∠1$ = \_\_\_\_\_\_\_

 Find $m∠2$ = \_\_\_\_\_\_\_

2) Find the values of the each numbered angle.

9

1

4

3

8

7

6

5

2

$$112°$$

$$70°$$

$$57°$$

$$36°$$

 $m∠1$=\_\_\_\_\_\_\_

 $m∠2$=\_\_\_\_\_\_\_

 $m∠3$=\_\_\_\_\_\_\_

 $m∠4$=\_\_\_\_\_\_\_

 $m∠5$=\_\_\_\_\_\_\_

 $m∠6$=\_\_\_\_\_\_\_

 $m∠7$=\_\_\_\_\_\_\_

 $m∠8$=\_\_\_\_\_\_\_

 $m∠9$=\_\_\_\_\_\_\_

4) Identify if the pair of triangles drawn can be determined congruent by SSS, SAS, ASA, or AAS. If cannot be determined, explain why.



Can you determine congruent triangles? : Yes or No
**If yes**, write the congruence statement: \_\_\_\_\_\_\_\_\_\_

**If yes**, What postulate or theorem was used?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**If no**, explain why not: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



Can you determine congruent triangles? : Yes or No
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**If yes**, What postulate or theorem was used?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**If no**, explain why not: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 For the following problems, write a formal proof.

5) 



6) Given: $\overbar{HI}≅\overbar{KI}$ and $\overbar{JI}≅\overbar{IL}$

 Prove: 

7) List all congruent sides and angles of the triangle



8) $∆ABC ≅∆DEF$ Find the missing values

B

6k

$$43°$$

n-3

C

D

x+2

E

9

m

12

z - 4

3y

7

F

A

$$101°$$

$$36°$$

 k = \_\_\_\_\_\_\_\_ x = \_\_\_\_\_\_\_\_

 m = \_\_\_\_\_\_\_\_ y = \_\_\_\_\_\_\_\_

 n = \_\_\_\_\_\_\_\_ z = \_\_\_\_\_\_\_\_