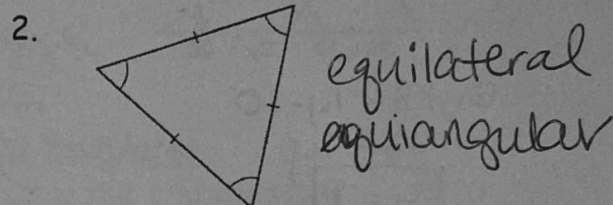
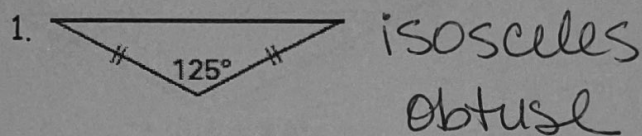


Congruent Triangles Unit Review Guide

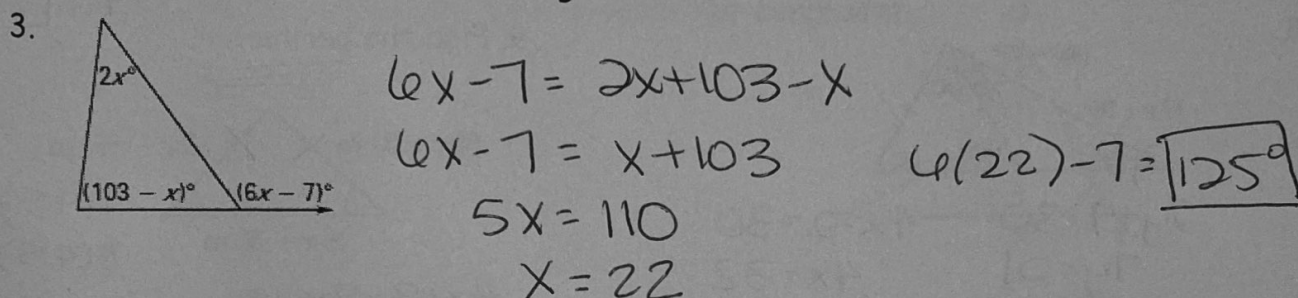
Name: Mrs. MacDonald

5.1: Triangle Sum Properties

Classify the triangle.



Find the measure of the exterior angle.



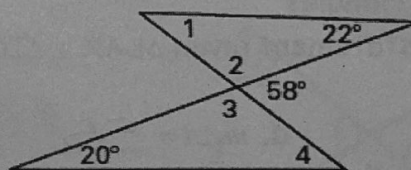
4. Find the measure of each numbered angle.

$$m\angle 2 = 122^\circ$$

$$m\angle 3 = 122^\circ$$

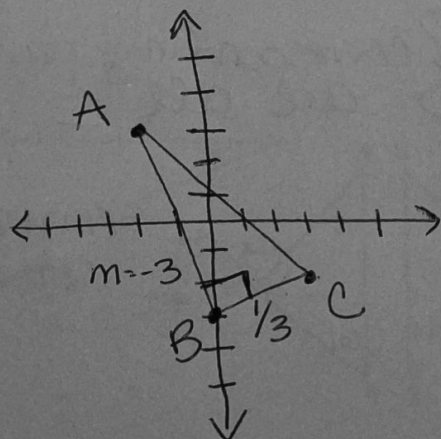
$$m\angle 1 = 36^\circ$$

$$m\angle 4 = 38^\circ$$



Classify Triangle ABC by its sides. Then determine whether it is a right triangle.

5. A(-2,3), B(0,-3), C(3,-2)

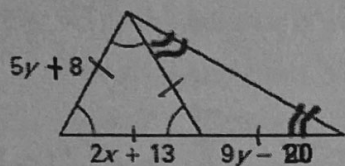


scalene
right triangle

5.4: Use Isosceles and Equilateral Triangles

Solve for x and y.

6.



$$5(7) + 8 = 43$$

$$2x + 13 = 43$$

$$2x = 30$$

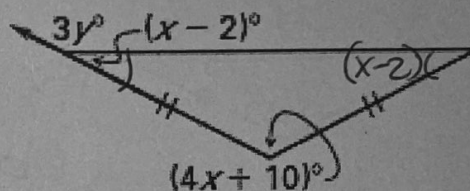
$$\boxed{x = 15}$$

$$5y + 8 = 9y - 20$$

$$28 = 4y$$

$$\boxed{y = 7}$$

7.



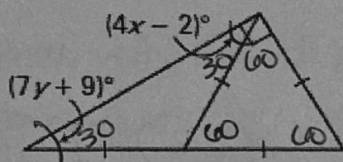
$$x - 2 + x - 2 + 4x + 10 = 180$$

$$6x + 6 = 180$$

$$6x = 174$$

$$\boxed{x = 29}$$

8.



$$7y + 9 = 30$$

$$7y = 21$$

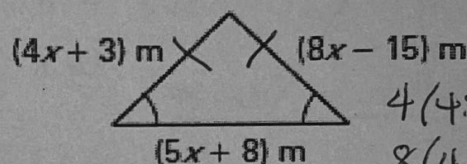
$$\boxed{y = 3}$$

$$4x - 2 = 30$$

$$4x = 32$$

$$\boxed{x = 8}$$

9. Find the perimeter.



$$4x + 3 = 8x - 15$$

$$18 = 4x$$

$$x = 4.5$$

$$4(4.5) + 3 = 21$$

$$8(4.5) - 15 = 21$$

$$5(4.5) + 8 = 30.5$$

$$\boxed{P = 72.5 \text{ m}}$$

5.2: Congruent Triangles

10. Complete the statement given $\triangle LAX \cong \triangle IGW$

a. $\angle I \cong \angle L$

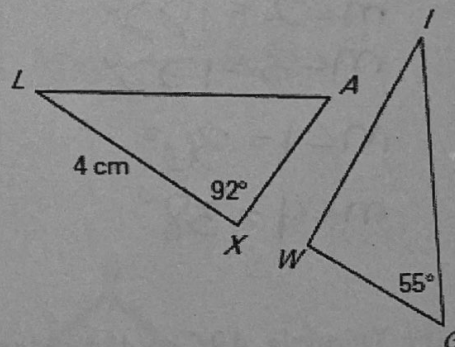
d. $m\angle A = 55^\circ$

b. $\overline{LX} \cong \overline{IW}$

e. $IW = 4 \text{ cm}$

c. $\triangle AXL \cong \triangle GWT$

f. $m\angle W = 92^\circ$



11. Based on the definition of congruence, what information is needed to show that two figures are congruent?

all 3 sides } corresponding parts
all 3 angles } are all $\cong$

12. Given $\triangle ABC \cong \triangle DEF$, find the values of x and y.

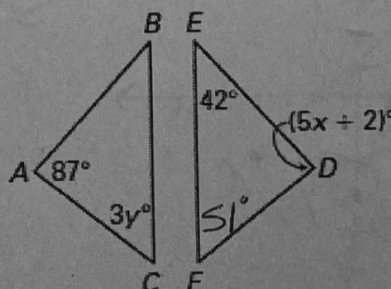
$$5x + 2 = 87$$

$$5x = 85$$

$$\boxed{x = 17}$$

$$3y = 51$$

$$\boxed{y = 17}$$



$$5(17) + 2 = 87$$

13. Find the value of x and y .

$$-2(5x + y) = 34$$

$$4x + 2y = 56$$

$$+ -10x - 2y = -68$$

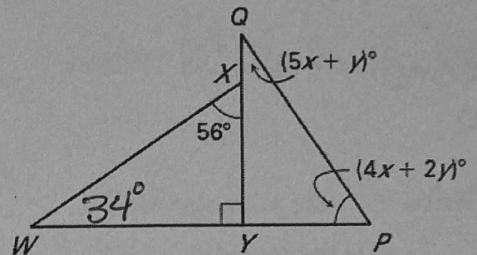
$$-6x = -12 \quad \boxed{x = 2}$$

$$4(2) + 2y = 56$$

$$8 + 2y = 56$$

$$2y = 48$$

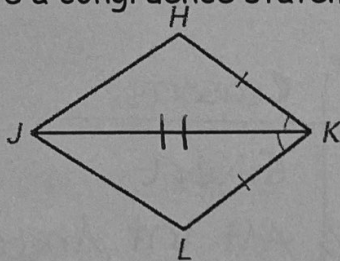
$$\boxed{y = 24}$$



5.3, 5.5, 5.6: Triangle Congruence Theorems and Postulates

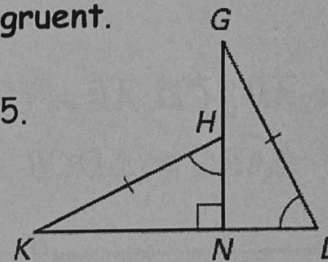
Decide whether enough information is provided to show the triangles are congruent. If so, write which congruence postulate/theorem would you use and write a congruence statement. If not, write **not congruent**.

14.



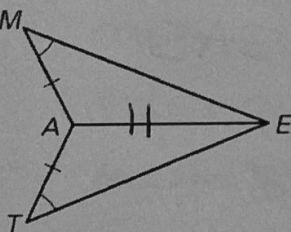
Post/Thrm SAS
 $\triangle JHK \cong \triangle JLK$

15.



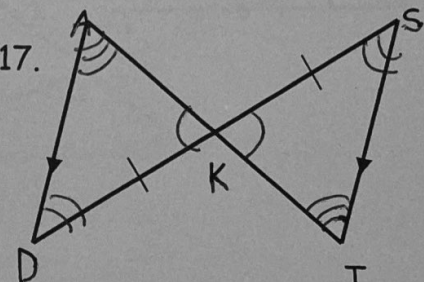
Post/Thrm AAS
 $\triangle HKN \cong \triangle LGN$

16.



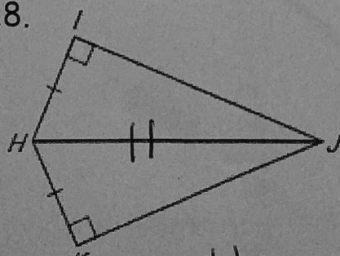
Post/Thrm none
 $\triangle MAE \cong \triangle \text{---}$

17.



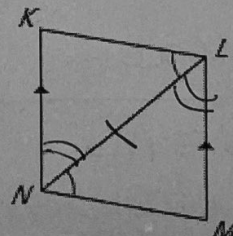
Post/Thrm ASA OR AAS
 $\triangle ADK \cong \triangle STK$

18.



Post/Thrm HL
 $\triangle IHJ \cong \triangle KJH$

19.



Post/Thrm ASA
 $\triangle KNL \cong \triangle LMN$

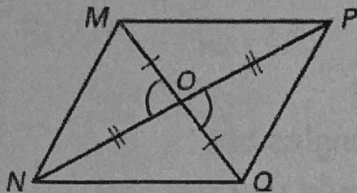
PROVE:

20.

Given: O is the midpoint of $\overline{MQ}$.

O is the midpoint of $\overline{NP}$.

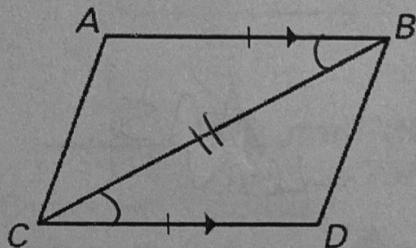
Prove: $\triangle MON \cong \triangle QOP$



Statements	Reasons
1. O is the midpoint of $\overline{MQ}$.	1. ? Given
2. ? $\overline{MO} \cong \overline{OQ}$	2. Definition of midpoint
3. ? O is midpoint of $\overline{NP}$	3. Given
4. ? $\overline{NO} \cong \overline{OP}$	4. Definition of midpoint
5. $\angle MON \cong \angle QOP$	5. ? Vertical angles
6. $\triangle MON \cong \triangle QOP$	6. ? SAS

21. Given: $\overline{AB} \parallel \overline{CD}$, $\overline{AB} \cong \overline{CD}$

Prove: $\triangle ABC \cong \triangle DCB$

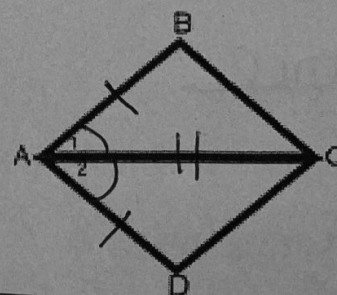


Statements	Reasons
$\overline{AB} \parallel \overline{CD}$	Given
$\angle ABC \cong \angle DCB$	Alt. Int. Angles
$\overline{AB} \cong \overline{CD}$	Given
$\overline{CB} \cong \overline{CB}$	Reflexive
$\triangle ABC \cong \triangle DCB$	SAS

22. Given: $\overline{AB} \cong \overline{AD}$

$\overline{AC}$ is an angle bisector to $\angle BAD$

Prove: $\triangle DCA \cong \triangle BCA$



Statements	Reasons
$\overline{AB} \cong \overline{AD}$	Given
$\overline{AC}$ is angle bisector to $\angle BAD$	Given
$\angle BAC \cong \angle DAC$	def. of bisector
$\overline{AC} \cong \overline{AC}$	Reflexive
$\triangle DCA \cong \triangle BCA$	SAS