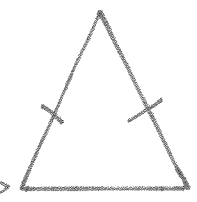



Unit 4A Test Review

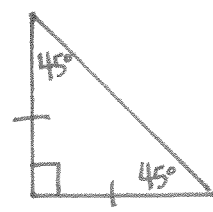
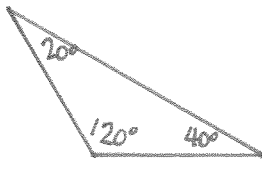
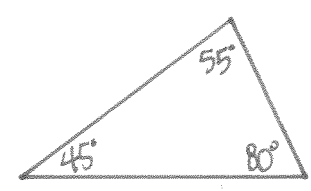
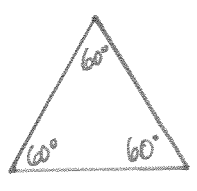
Name Master G
Date _____ Block _____

Skill Set 1: The student will classify triangles by sides and angles & apply the triangle sum & exterior-theorems in real world situations.

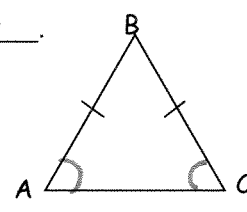
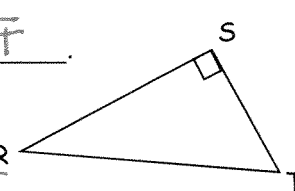
1-7: True or False? Do you know the triangle properties, the types of triangles, and the theorems about angles?

- True 1. An equilateral triangle can be isosceles. *it does have 2 ≅ sides!*
- False 2. Some triangles have 2 right angles. *3 ∠s add up to 180° not 2 ∠s!*
- True 3. If 2 angles of one triangle are complementary, then the triangle is a right triangle.
- False 4. An isosceles triangle is equilateral. *not always!* 
- True 5. If each angle of a triangle is less than 90°, then the triangle is acute.
- False 6. A triangle that has 3 angles congruent to 3 angles of another triangle will always be congruent.
- True 7. An exterior angle of an equilateral triangle is 120°. *60 120 T!* 

8-11: Draw the following triangles. Do you know the types of triangles and what they look like?

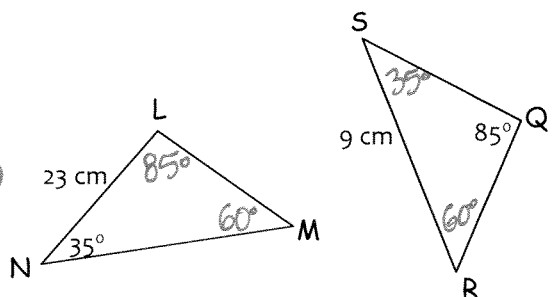
<p>8. An isosceles right Δ</p> 	<p>9. An obtuse scalene Δ</p> 	<p>10. An acute scalene Δ</p> 	<p>11. An equiangular Δ</p> 
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12-16: Given isosceles ΔABC, fill in each blank below. **17-21: Given right ΔRST, fill in each blank below.**

<p>12. The legs are <u>AB</u> & <u>BC</u>.</p> <p>13. The base is <u>AC</u>.</p> <p>14. The vertex angle is <u>∠B</u>.</p> <p>15. The base angles are <u>∠A</u> & <u>∠C</u>.</p> <p>16. The congruent angles are <u>∠A</u> & <u>∠C</u>.</p> 	<p>17. The legs are <u>RS</u> & <u>ST</u>.</p> <p>18. The hypotenuse is <u>RT</u>.</p> <p>19. The side opposite ∠R is <u>ST</u>.</p> <p>20. The angle opposite RS is <u>∠T</u>.</p> <p>21. The included side between ∠R & ∠S is <u>RS</u>.</p> 
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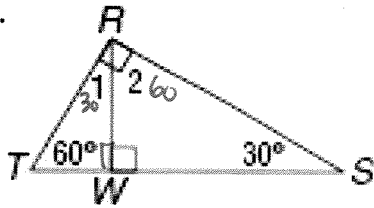
Skill Set 2: The students will use CPCTC to find missing sides and angles of congruent triangles.

22-29: If ΔLMN ≅ ΔQRS, then find all corresponding parts or measures. Do you know that CPCTC?
Note: = means to give a numeric answer and ≅ means to name a part that is corresponding to the given part.

22. $\angle R \cong \underline{\angle M}$	26. $\overline{LM} \cong \underline{\overline{QR}}$	
23. $\overline{QS} \cong \underline{\overline{LN}}$	27. $\Delta MNL \cong \underline{\Delta RSQ}$	
24. $m\angle L = \underline{85^\circ} (=m\angle Q)$	28. $m\angle M = \underline{60^\circ} (=m\angle R)$	
25. $m\angle S = \underline{35^\circ} (=m\angle N)$	29. $\Delta SRQ \cong \underline{\Delta NML}$	

30-41: Find the unknown values in each triangle. SHOW WORK on EQUATIONS! Do you know the angle sum of a triangle? Do you know what angles add up to equal the exterior angle? Do you know the properties of the isosceles and equilateral triangles? Do you know how to write an equation based on your knowledge and solve for x?

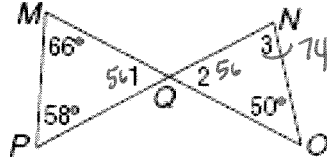
30.



$m\angle 1 = \underline{30^\circ}$

$m\angle 2 = \underline{60^\circ}$

31.

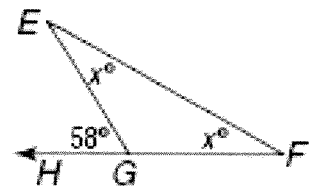


$m\angle 1 = \underline{56^\circ}$

$m\angle 2 = \underline{56^\circ}$

$m\angle 3 = \underline{74^\circ}$

32.

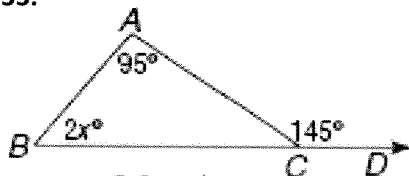


$x = \underline{29}$

$2x = 58$

$x = 29$

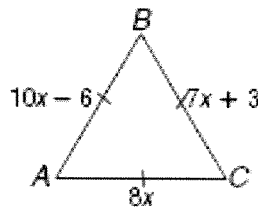
33.



$2x + 95 = 145$
 $2x = 50$

$x = \underline{25}$

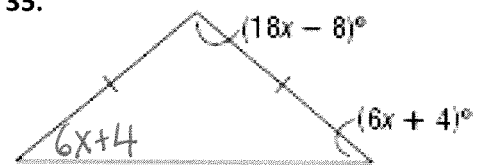
34. $\triangle ABC$ is equilateral



$10x - 6 = 8x$
 $-6 = -2x$
 $3 = x$

$x = \underline{3}$

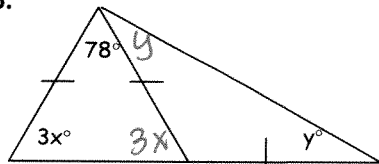
35.



$18x - 8 + 6x + 4 + 6x + 4 = 180$
 $30x = 180$

$x = \underline{6}$

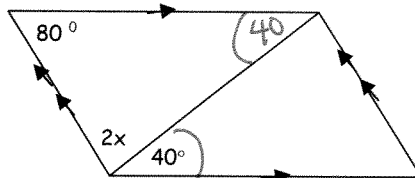
36.



$3x + 3x + 78 = 180$
 $6x = 102$
 $x = \underline{17}$
 $y = \underline{25.5}$

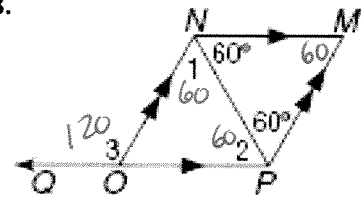
$2y = 3x$
 $2y = 3(17)$
 $2y = 51$
 $y = 25.5$

37.



$2x + 40 + 80 = 180$
 $2x + 120 = 180$
 $2x = 60$
 $x = \underline{30}$

38.

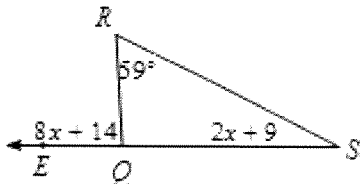


$m\angle 1 = \underline{60}$

$m\angle 2 = \underline{60}$

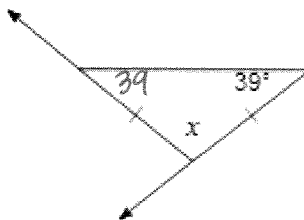
$m\angle 3 = \underline{120}$

39.



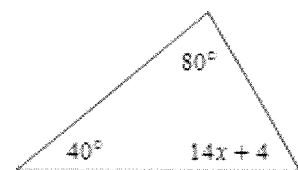
$2x + 9 + 59 = 8x + 14$
 $2x + 68 = 8x + 14$
 $68 = 6x + 14$
 $54 = 6x$
 $9 = x$

40.



$x + 39 + 39 = 180$
 $x + 78 = 180$
 $x = \underline{102}$

41.

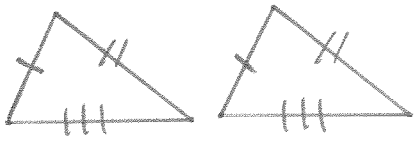


$14x + 4 + 40 + 80 = 180$
 $14x + 124 = 180$
 $14x = 56$
 $x = \underline{4}$

Skill Set 3: Students will prove that triangles are congruent using the following methods: SSS, SAS, ASA, AAS, or HL

42-46: Draw a detailed picture for each of the following triangle relationships. **47:** Answer the question.

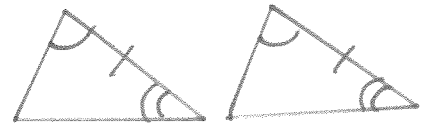
42. Draw a picture of 2 triangles congruent by SSS.



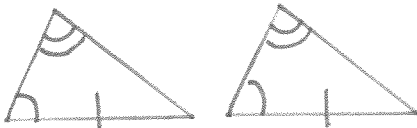
43. Draw a picture of 2 triangles congruent by SAS.



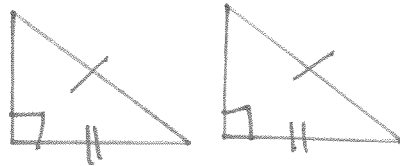
44. Draw a picture of 2 triangles congruent by ASA.



45. Draw a picture of 2 triangles congruent by AAS.



46. Draw a picture of 2 triangles congruent by the HL Theorem



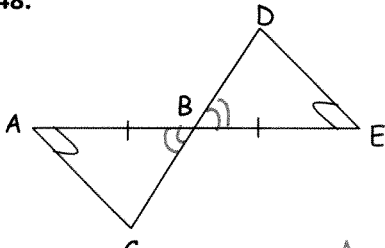
47. What does CPCTC mean?

It is the def. of $\cong \Delta s$, which means that corresponding parts of $\cong \Delta s$ will be \cong !

48-53: Mark the triangles, make a congruency statement, and state why the triangles are congruent.

Do you know what to mark congruent on triangles and what makes them congruent by SSS, SAS, ASA, AAS, and HL?

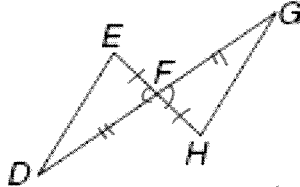
48.



$\triangle ABC \cong \triangle EBD$ by ASA

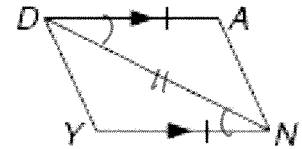
49.

\overline{EH} and \overline{DG} bisect each other.



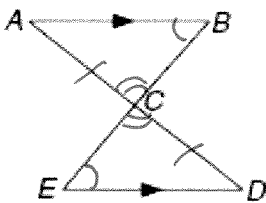
$\triangle DEF \cong \triangle GHE$ by SAS

50.



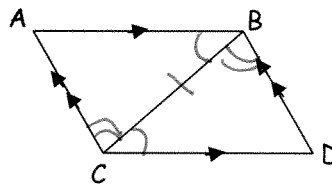
$\triangle DYN \cong \triangle NAD$ by SAS

51. C is the midpoint of \overline{AD}



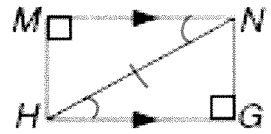
$\triangle ABC \cong \triangle DEC$ by AAS

52.



$\triangle ABC \cong \triangle DCB$ by ASA

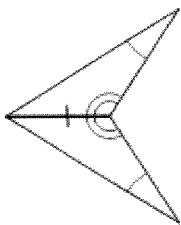
53.



$\triangle HMN \cong \triangle NGH$ by AAS

54-56: Mark the two triangles to determine congruency. Circle \cong by _____ (give a reason) or Not \cong .

54.



\cong by AAS Not \cong

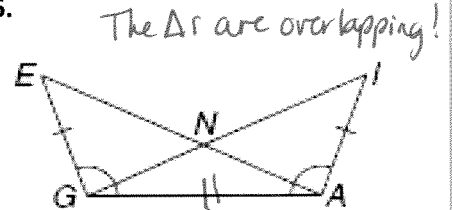
55.



There is no AAA!

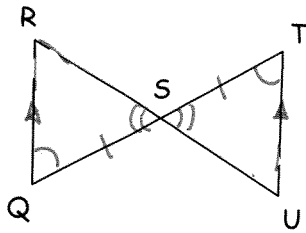
\cong by _____ (Not \cong)

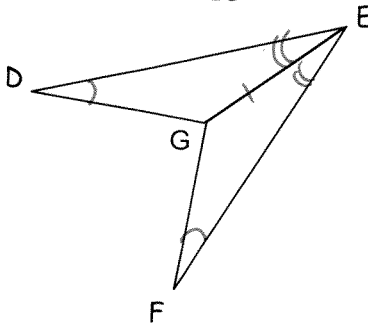
56.

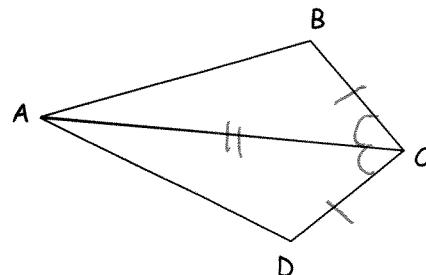


\cong by SAS Not \cong

57-59: Complete each proof with the correct statements & reasons. Do you know how to prove triangles congruent by marking the picture, planning, and then writing the statements and reasons to justify your plan?

<p>57. Given: $\overline{QR} \parallel \overline{TU}$ S is the midpoint of \overline{QT} Prove: $\triangle QSR \cong \triangle TSU$</p> 	Statements:	Reasons:
	1. $\overline{QR} \parallel \overline{TU}$ S is the midpoint of \overline{QT}	1. Given
	2. $\angle Q \cong \angle T$	2. When 2 lines are cut, alt. int. are are
	3. $\overline{QS} \cong \overline{ST}$	3. Definition of a Midpoint
	4. $\angle RSQ \cong \angle TSU$	4. Vertical angles are congruent
5. $\triangle QSR \cong \triangle TSU$	5. ASA	

<p>58. Given: $\angle D \cong \angle F$, \overline{GE} bisects $\angle DEF$ Prove: $\triangle DEG \cong \triangle FEG$</p> 	1. \overline{GE} bisects $\angle DEF$	1. Given
	2. $\angle DEG \cong \angle FEG$	2. Definition of an angle bisector
	3. $\angle D \cong \angle F$	3. Given
	4. $\overline{GE} \cong \overline{GE}$	4. Reflexive Property of Congruency
	5. $\triangle DEG \cong \triangle FEG$	5. AAS

<p>59. Given: $\overline{BC} \cong \overline{DC}$, \overline{AC} bisects $\angle BCD$ Prove: $\triangle ABC \cong \triangle ADC$</p> 	1. \overline{AC} bisects $\angle BCD$	1. Given
	2. $\overline{BC} \cong \overline{DC}$	2. Given
	3. $\angle BCA \cong \angle DCA$	3. Def \angle bisector
	4. $\overline{AC} \cong \overline{AC}$	4. Reflexive Property of Congruency
	5. $\triangle ABC \cong \triangle ADC$	5. SAS