CHAPTER 4 STUDY GUIDE: Correct your work @ hinsdalemath.weebly.com Name_____

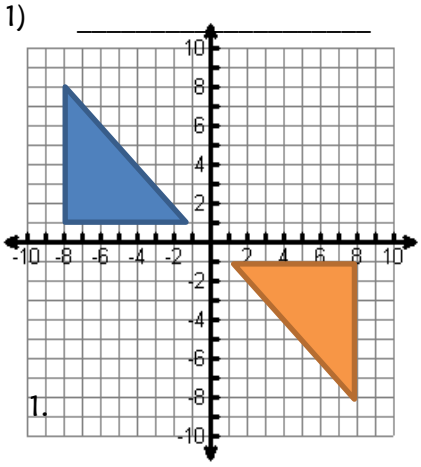
4.1 Congruence and Transformations 1 2 3 4 5

Learning Target 4.1.a: Draw, identify & describe transformations in the coordinate plane.

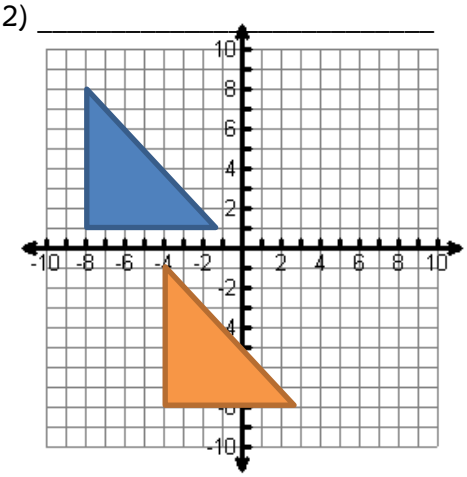
Learning Target 4.1.b: Determine whether figures are congruent.

Describe the transformations that occur on the triangles in the coordinate plane below.

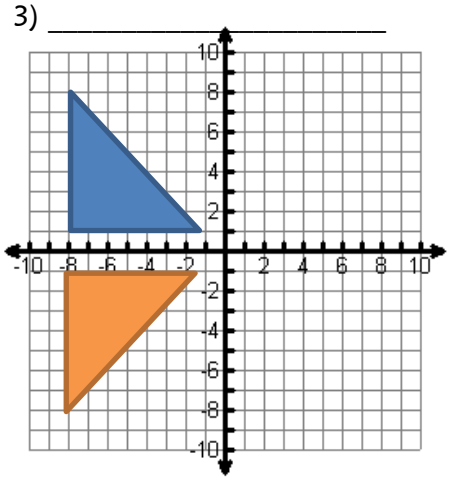
1) _____



2) _____



3) _____



What do you notice about the SIZE and SHAPE of all of these images? _____

4.2 Classifying Triangles 1 2 3 4 5

Learning Target 4.2: Classify a triangle by its sides and angles.

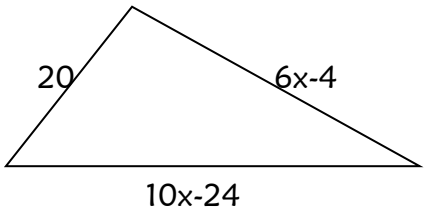
Determine if the statement is Sometimes, Always, or Never true.

_____2. An obtuse triangle has all obtuse angles.

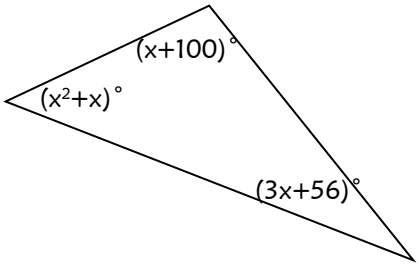
_____3. An acute triangle has all acute angles.

_____4. The base of an isosceles triangle is congruent to the sides.

5. Classify the triangle as **Scalene, Isosceles, or Equilateral.** The perimeter of the triangle is 56.



6. Classify the triangle as **Obtuse, Acute, or Right**



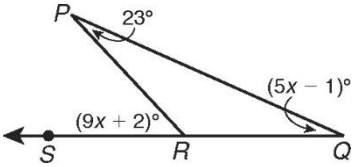
4.3 Angle Relationships in Triangles 1 2 3 4 5

Learning Target 4.3.a: Use the Triangle Sum Thm. to find a missing angle in a triangle.

Learning Target 4.3.b: Use the Exterior Angle Thm. to find a missing angle in a triangle.

Learning Target 4.3.c: Apply the Third Angle Theorem to find angle measures.

7. m<*PRS*



8. The measure of three angles of a triangle are in the ratio 2:3:4. Find the measure of the largest angle.

4.4 Congruent Triangles 1 2 3 4 5

Learning Target 4.4: Identify congruent corresponding parts of congruent polygons.

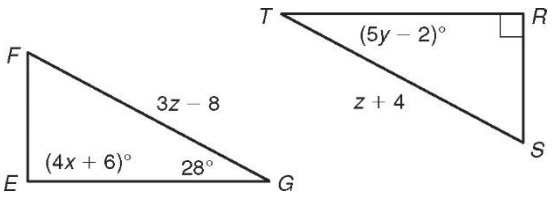
Given: $\triangle EFG \cong \triangle RST$. Find each value below.

9. $x =$ _____

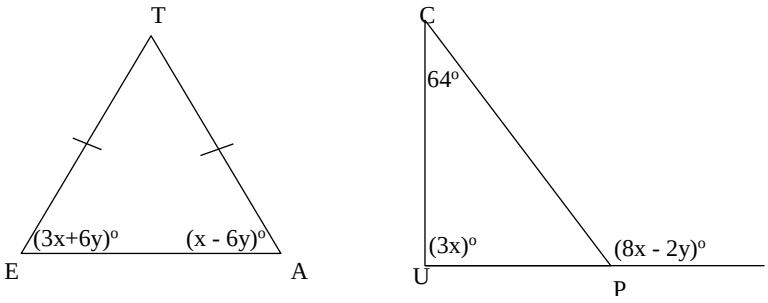
10. $y =$ _____

11. m$<F =$ _____

12. $ST =$ _____



13. Find x and y. (Hint: Set up a System of Equations)



4.5 Triangle Congruence SSS and SAS 1 2 3 4 5

Learning Target 4.5: Prove triangles congruent by SSS and SAS.

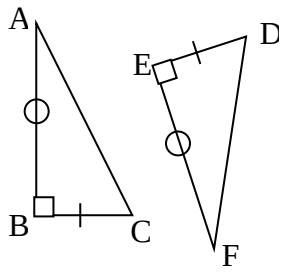
4.6 Triangle Congruence: ASA, AAS, HL 1 2 3 4 5

Learning Target 4.6.a: Prove triangles congruent by ASA, AAS, and HL in a two column proof.

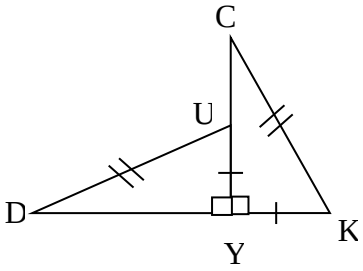
List the 5 WAYS of proving triangles CONGRUENT: _____

For #14-19: Write the postulate that would be used to prove the triangles congruent (if possible), and list the triangles.

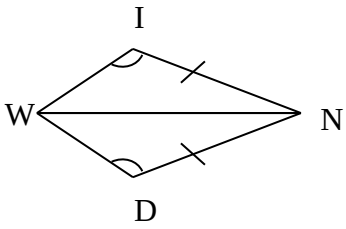
14. _____



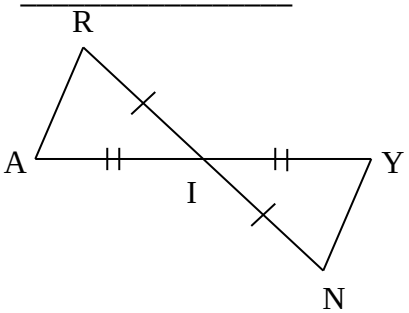
15. _____



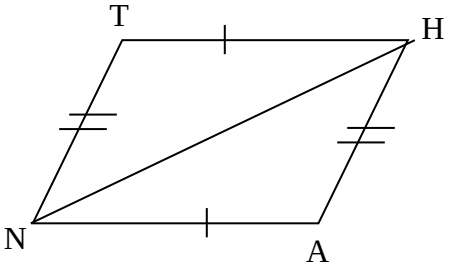
16. _____



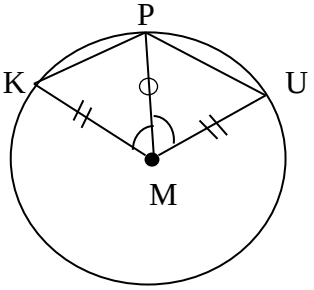
17. _____



18. _____



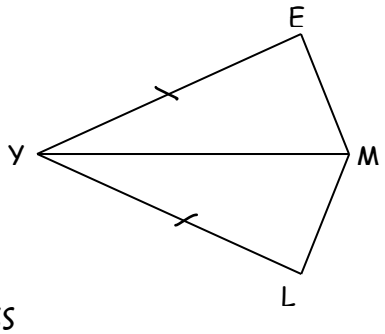
19. _____



Learning Target 4.6.b: Name additional information to prove triangles congruent.

20. Name the additional congruent sides of angles needed to prove that the triangles are congruent by each specified method.

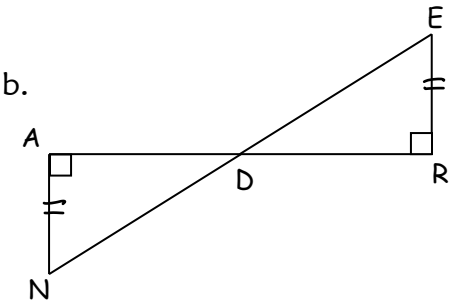
a.



SSS _____

SAS _____

b.



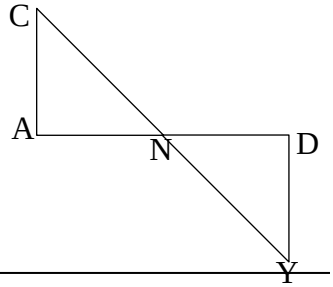
SAS _____

ASA _____

4.7 Triangle Congruence CPCTC 1 2 3 4 5

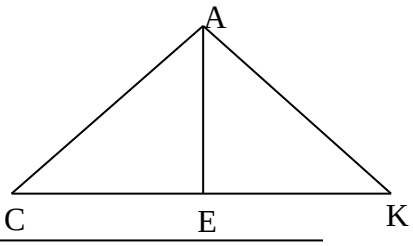
Learning Target 4.7: Prove corresponding parts of congruent triangles are congruent in the coordinate plane and in a two column proof.

21. Given: $\angle C \cong \angle Y$
$\overline{CN} \cong \overline{YN}$
Prove: $\overline{AN} \cong \overline{DN}$



Statements	Reasons

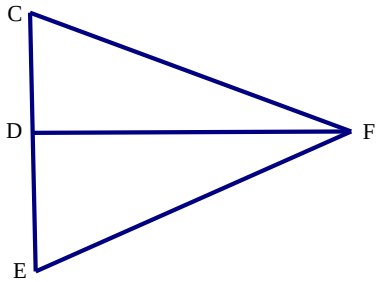
22. Given: $\overline{AC} \cong \overline{AK}$
$\overline{EA}$ bisects $\angle CAK$
Prove: $\overline{AE}$ is the median to $\overline{CK}$



Statements	Reasons

23. Given: D is the midpoint of $\overline{CE}$

$\overline{FD}$ is an altitude



Prove: $\angle CFD \cong \angle EFD$

Statements	Reasons

4.9 Isosceles and Equilateral Triangles

1 2 3 4 5

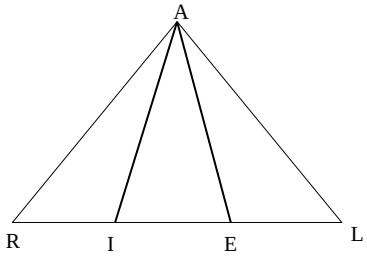
Learning Target 4.9.a: Prove theorems about isosceles and equilateral triangles in a two column proof.

Learning Target 4.9.b: Use properties of isosceles and equilateral triangles to solve algebraic problems.

24. Given: ΔARL is isosceles with base $\overline{RL}$

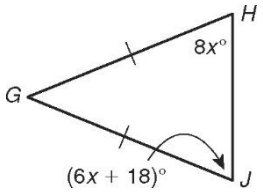
$\angle RIA \cong \angle LEA$

Prove: $\Delta RIA \cong \Delta LEA$

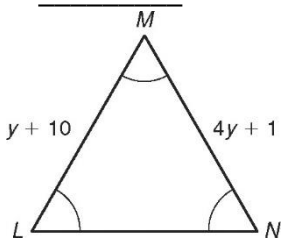


Statements	Reasons

25. $M < G =$ _____



26. $MN =$ _____ $\angle L =$ _____



Be sure to study notes, homework assignments, and practice problems from the book. This is your last test of the Quarter… finish strong!