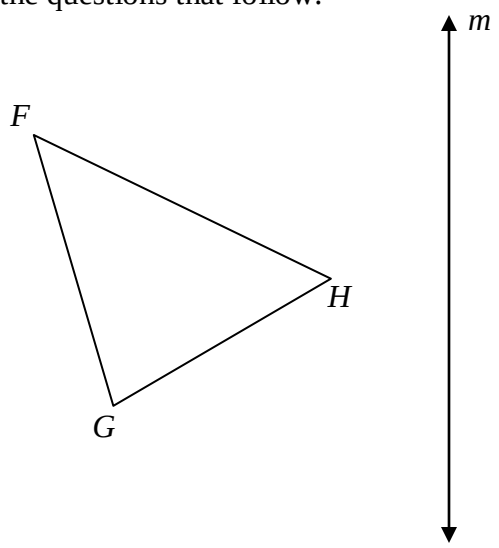
Unit 5, Activity 2, Investigating Congruence

Part One: Given $\triangle FGH$ and the line of reflection, line *m*, perform the indicated reflections and answer the questions that follow.



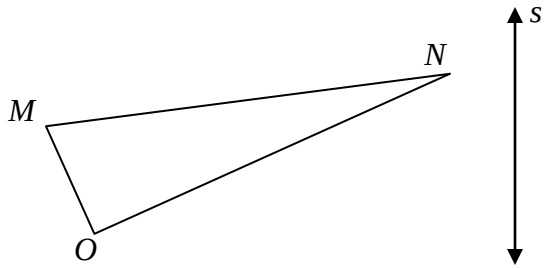
1. Reflect $\overline{FG}$. What is true about $\overline{F'G'}$? Explain your reasoning.

2. Reflect $\overline{GH}$. What is true about $\overline{G'H'}$? Explain your reasoning.

3. Reflect $\overline{FH}$. What is true about $\overline{F'H'}$? Explain your reasoning.

4. Is $\triangle FGH \cong \triangle F'G'H'$? Justify your answer.

Part Two: Given $\triangle MNO$ and the line of reflection, line *s*, answer the following.

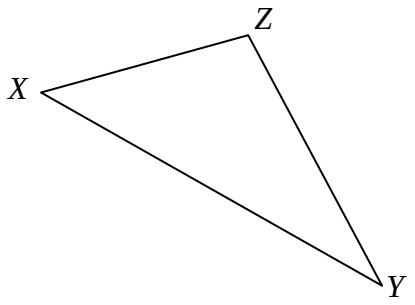


1. Reflect $\overline{MN}$ and $\overline{MO}$. What is true about $\overline{M'N'}$, $\overline{M'O'}$, and $\angle N'M'O'$? Justify your answer.

2. Connect *N'* and *O'*. Is $\triangle MNO \cong \triangle M'N'O'$? Justify your answer.

Unit 5, Activity 2, Investigating Congruence

Part Three: Given $\triangle XYZ$ use three sheets of patty paper to complete the following steps and answer the questions that follow.

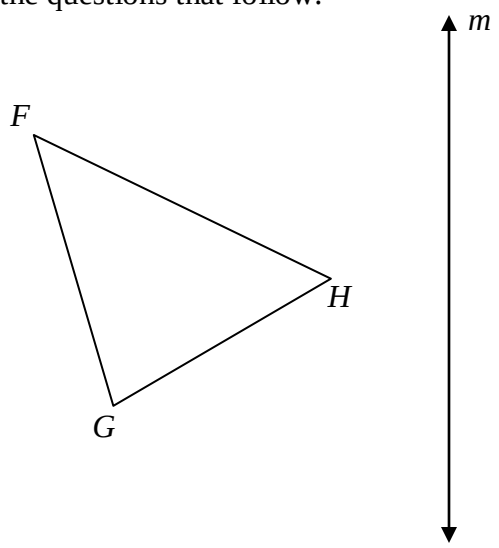


1. Using one sheet of patty paper, copy $\overline{XY}$ and label the endpoints *X'* and *Y'* respectively.
2. Using a second sheet of patty paper, copy $\angle ZXY$. Copy the angle only, including the sides, $\overline{XZ}$ and $\overline{XY}$. Do not copy $\overline{ZY}$ on this paper. Label the vertex of the angle as *X'* and the endpoints of the sides as *Z'* and *Y'* respectively.
3. Using the third sheet of patty paper, copy $\angle ZYX$. Copy the angle only, including the sides, $\overline{YX}$ and $\overline{YZ}$. Do not copy $\overline{XZ}$ on this paper. Label the vertex of the angle as *Y'*, and the endpoints of the sides as *X'* and *Z'* respectively.
4. What should be true about the segment and both angles you copied onto the three sheets of patty paper? How can you verify your conjecture?

5. Now, starting with the patty paper with $\overline{X'Y'}$, lay the other two pieces of patty paper on top of the first one lining up $\overline{X'Y'}$ on each piece of paper. What happens? What is true about $\triangle XYZ$ and $\triangle X'Y'Z'$? How can you verify your conjecture?

Unit 5, Activity 2, Investigating Congruence with Answers

Part One: Given $\triangle FGH$ and the line of reflection, line *m*, perform the indicated reflections and answer the questions that follow.



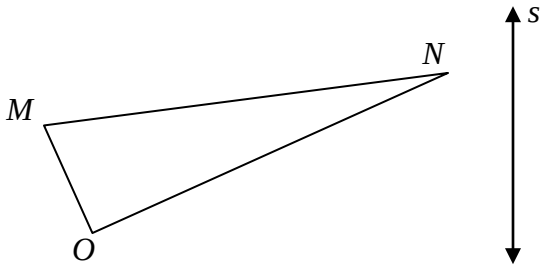
1. Reflect $\overline{FG}$. What is true about $\overline{F'G'}$? Explain your reasoning.
   The segments are congruent. Reflection does not change length.

2. Reflect $\overline{GH}$. What is true about $\overline{G'H'}$? Explain your reasoning.
   The segments are congruent. Reflection does not change length.

3. Reflect $\overline{FH}$. What is true about $\overline{F'H'}$? Explain your reasoning.
   The segments are congruent. Reflection does not change length.

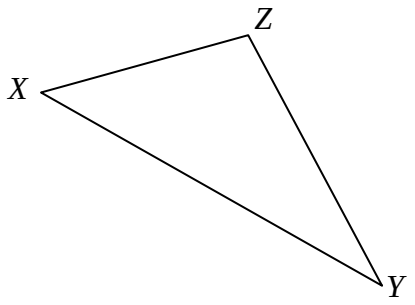
4. Is $\triangle FGH \cong \triangle F'G'H'$? Justify your answer.
   Yes, all of the segments are congruent; the angles are also congruent because reflection is an isometry and will not change the angle measure.

Part Two: Given $\triangle MNO$ and the line of reflection, line *s*, answer the following.



1. Reflect $\overline{MN}$ and $\overline{MO}$. What is true about $\overline{M'N'}$, $\overline{M'O'}$, and $\angle N'M'O'$? Justify your answer.
   The segments and angles are congruent; reflection preserves length and angle measure.
2. Connect *N'* and *O'*. Is $\triangle MNO \cong \triangle M'N'O'$? Justify your answer.
   Yes. $\overline{N'O'}$ is also a reflection so all corresponding sides and angles are congruent.

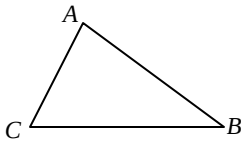
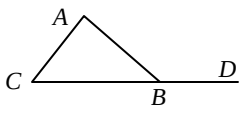
Part Three: Given $\triangle XYZ$ use three sheets of patty paper to complete the following steps and answer the questions that follow.



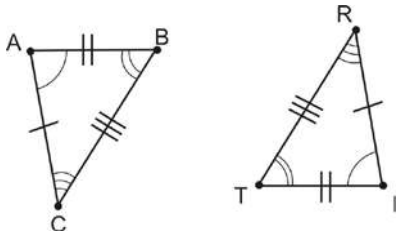
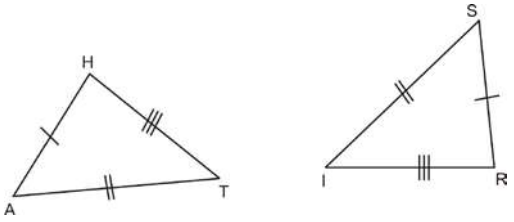
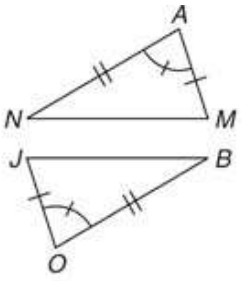
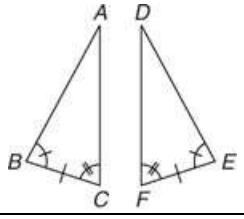
1. Using one sheet of patty paper, copy $\overline{XY}$ and label the endpoints *X'* and *Y'* respectively.
2. Using a second sheet of patty paper, copy $\angle ZXY$. Copy the angle only, including the sides, $\overline{XZ}$ and $\overline{XY}$. Do not copy $\overline{ZY}$ on this paper. Label the vertex of the angle as *X'* and the endpoints of the sides as *Z'* and *Y'* respectively.
3. Using the third sheet of patty paper, copy $\angle ZYX$. Copy the angle only, including the sides, $\overline{YX}$ and $\overline{YZ}$. Do not copy $\overline{XZ}$ on this paper. Label the vertex of the angle as *Y'*, and the endpoints of the sides as *X'* and *Z'* respectively.
4. What should be true about the segment and both angles you copied onto the three sheets of patty paper? How can you verify your conjecture?

   Since they are copies of the original triangle, they should be congruent. This can be verified by measuring the length of both segments and by measuring the corresponding angles.
5. Now, starting with the patty paper with $\overline{X'Y'}$, lay the other two pieces of patty paper on top of the first one lining up $\overline{X'Y'}$ on each piece of paper. What happens? What is true about $\triangle XYZ$ and $\triangle X'Y'Z'$? How can you verify your conjecture?

   When all three papers are laid on top of each other, it creates a triangle, namely $\triangle X'Y'Z'$. These two triangles are congruent. This can be verified either by measuring all corresponding sides and angles or by laying $\triangle X'Y'Z'$ over $\triangle XYZ$ to see that the sides and angle have the same size.

Date: **Period:**	**Topic: Triangles**
Triangle	--a closed figure with three segments joining three non-collinear points --named using the three vertices
vertex	--the point where two segments meet; a corner of a triangle --Every triangle has three vertices.
sides	--a segment whose endpoints are the vertices of the triangle --Every triangle has three sides. Example: Name: $\triangle ABC$ Sides: $\overline{AB}, \overline{BC}$, and $\overline{AC}$ Vertices: *A*, *B*, and *C* 
Classifications by Angle: Acute	--a triangle with three acute angles
Obtuse	--a triangle with exactly one obtuse angle
Right	--a triangle with exactly one right angle
Equiangular	--a triangle with three congruent angles --all angles measure 60 degrees --also considered an acute triangle.
Classifications by Sides: Scalene	--a triangle with no congruent sides
Isosceles	--a triangle with at least two congruent sides
Equilateral	--a triangle with all three sides congruent --also considered an isosceles triangle
Triangle Sum Theorem	--The sum of the measures of the angles of a triangle is 180°.
Exterior Angle Theorem	--The measure of an exterior angle of a triangle is equal to the sum of the two non-adjacent interior angles.  $m\angle ABD = m\angle A + m\angle C$

Date: **Period:**	**Topic:**

Date: **Period:**	**Topic: Congruent Triangles**
CPCTC	Corresponding parts of congruent triangles are congruent (if two triangles are congruent, then all pairs of corresponding parts are also congruent). $\triangle ABC \cong \triangle ITR$ $\angle A \cong \angle I$ $\quad \overline{AB} \cong \overline{IT}$ $\angle B \cong \angle T$ $\quad \overline{BC} \cong \overline{TR}$ $\angle C \cong \angle R$ $\quad \overline{AC} \cong \overline{IR}$ 
Side-Side-Side (SSS) Postulate	If three sides of one triangle are congruent to three sides of a second triangle, then the triangles are congruent. $\triangle HAT \cong \triangle SRI$ because $\overline{HA} \cong \overline{SR}$ $\overline{AT} \cong \overline{RI}$ $\overline{HT} \cong \overline{SI}$ 
Side-Angle-Side (SAS) Postulate	If two sides and the included angle of one triangle are congruent to two sides and the included angle of a second triangle, then the two triangles are congruent. $\triangle MAN \cong \triangle JOB$ because $\overline{MA} \cong \overline{JO}$ $\angle A \cong \angle O$ $\overline{AN} \cong \overline{OB}$ 
Angle-Side-Angle (ASA) Postulate	If two angles and the included side of one triangle are congruent to two angle and the included side of a second triangle, then the two triangles are congruent. $\triangle ABC \cong \triangle DEF$ because $\angle B \cong \angle E$ $\overline{BC} \cong \overline{EF}$ $\angle C \cong \angle F$ 

Group Members _____

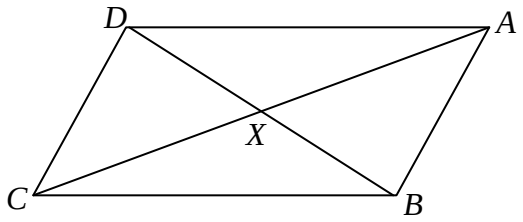
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the triangles congruent.

Given: X is the midpoint of $\overline{BD}$
X is the midpoint of $\overline{AC}$

Prove: $\triangle DXC \cong \triangle BXA$



Write your proof below. Be sure to include all logical reasoning.

Group Members _____

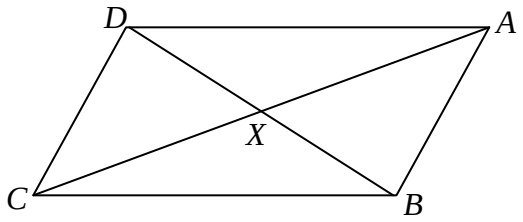
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the sides congruent.

Given: X is the midpoint of $\overline{BD}$
X is the midpoint of $\overline{AC}$

Prove: $\overline{DA} \cong \overline{BC}$



Write your proof below. Be sure to include all logical reasoning.

Group Members _____

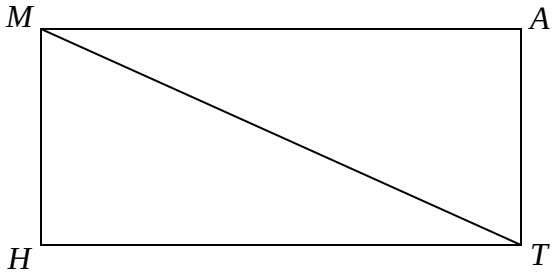
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the angles congruent.

Given: $\overline{MA} \cong \overline{TH}$; $\overline{HM} \cong \overline{TA}$

Prove: $\angle H \cong \angle A$



Write your proof below. Be sure to include all logical reasoning.

Group Members _____

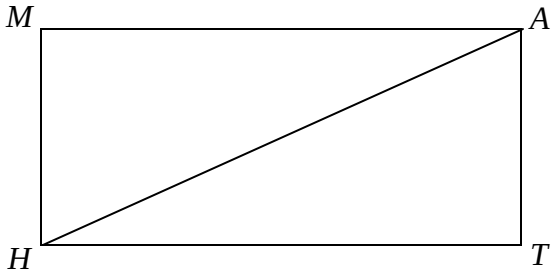
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the sides congruent.

Given: $\overline{MA} \parallel \overline{TH}$; $\overline{MA} \cong \overline{TH}$

Prove: $\overline{MH} \cong \overline{AT}$



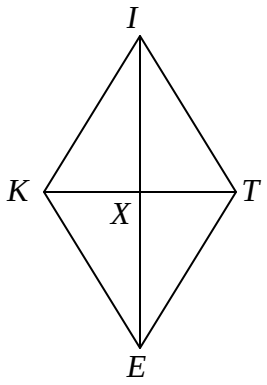
Write your proof below. Be sure to include all logical reasoning.

Group Members _____

Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the triangles congruent.



Given: X is the midpoint of $\overline{KT}$

$\overline{IE} \perp \overline{KT}$

Prove: $\triangle KXE \cong \triangle TXE$

Write your proof below. Be sure to include all logical reasoning.

Group Members _____

Date _____

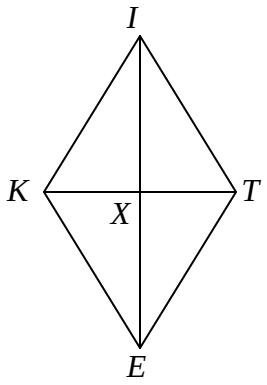
Proving Triangles Congruent

Using the given diagram and information, prove two of the sides congruent.

Given: X is the midpoint of $\overline{KT}$

$\overline{IE} \perp \overline{KT}$

Prove: $\overline{KI} \cong \overline{TI}$



Write your proof below. Be sure to include all logical reasoning.

Group Members _____

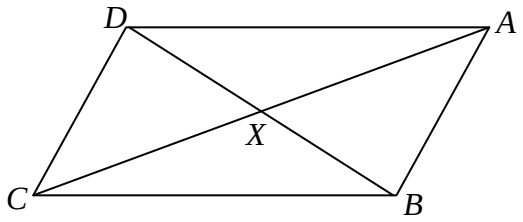
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the triangles congruent.

Given: X is the midpoint of $\overline{BD}$
X is the midpoint of $\overline{AC}$

Prove: $\triangle DXC \cong \triangle BXA$



Write your proof below. Be sure to include all logical reasoning.

Statements	***Reasons***
1. X is the midpoint of $\overline{BD}$; X is the midpoint of $\overline{AC}$.	*1. Given*
2. $\overline{XD} \cong \overline{XB}$; $\overline{XA} \cong \overline{XC}$	*2. Midpoint Theorem*
3. $\angle DXC \cong \angle BXA$	*3. Vertical angles are congruent.*
4. $\triangle DXC \cong \triangle BXA$	*4. SAS Postulate*

Group Members _____

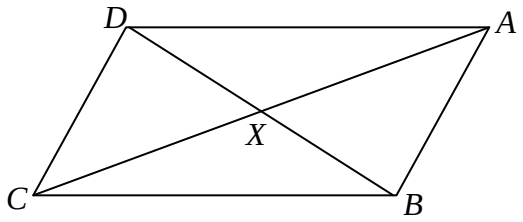
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the sides triangles congruent.

Given: X is the midpoint of $\overline{BD}$
X is the midpoint of $\overline{AC}$

Prove: $\overline{DA} \cong \overline{BC}$



Write your proof below. Be sure to include all logical reasoning.

Statements	***Reasons***
1. X is the midpoint of $\overline{BD}$; X is the midpoint of $\overline{AC}$.	*1. Given*
2. $\overline{XD} \cong \overline{XB}$; $\overline{XA} \cong \overline{XC}$	*2. Midpoint Theorem*
3. $\angle DXA \cong \angle BXC$	*3. Vertical angles are congruent.*
4. $\triangle DXA \cong \triangle BXC$	*4. SAS Postulate*
5. $\overline{DA} \cong \overline{BC}$	*5. CPCTC*

Group Members _____

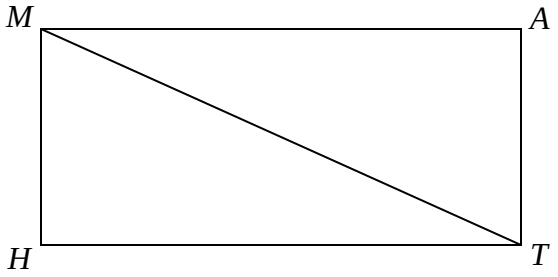
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the angles triangles congruent.

Given: $\overline{MA} \cong \overline{TH}$; $\overline{HM} \cong \overline{TA}$

Prove: $\angle H \cong \angle A$



Write your proof below. Be sure to include all logical reasoning.

Statements	***Reasons***
1. $\overline{MA} \cong \overline{TH}$; $\overline{HM} \cong \overline{TA}$	*1. Given*
2. $\angle HMT \cong \angle ATM$	*2. Alternate Interior Angles Theorem*
3. $\angle AMT \cong \angle HTM$	*3. Alternate Interior Angles Theorem*
4. $\overline{MT} \cong \overline{MT}$	*4. Reflexive Property of Congruence*
5. $\triangle MHT \cong \triangle TAM$	*5. ASA Postulate*
6. $\angle H \cong \angle A$	*6. CPCTC*

Group Members _____

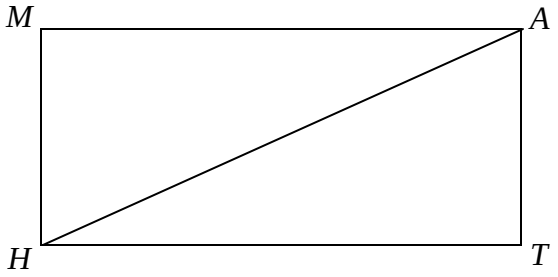
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the sides triangles congruent.

Given: $\overline{MA} \parallel \overline{TH}$; $\overline{MA} \cong \overline{TH}$

Prove: $\overline{MH} \cong \overline{AT}$



Write your proof below. Be sure to include all logical reasoning.

Statements	***Reasons***
1. $\overline{MA} \parallel \overline{TH}$; $\overline{MA} \cong \overline{TH}$	*1. Given*
2. $\angle MAH \cong \angle THA$	*2. Alternate Interior Angles Theorem*
3. $\overline{AH} \cong \overline{AH}$	*3. Reflexive Property of Congruence*
4. $\triangle MHT \cong \triangle TAM$	*4. SAS Postulate*
5. $\overline{MH} \cong \overline{TA}$	*5. CPCTC*

Group Members _____

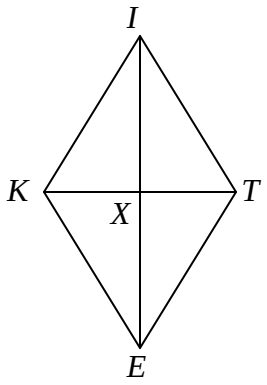
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the triangles congruent.

Given: X is the midpoint of $\overline{KT}$
$\overline{IE} \perp \overline{KT}$

Prove: $\triangle KXE \cong \triangle TXE$



Write your proof below. Be sure to include all logical reasoning.

Statements	***Reasons***
1. X is the midpoint of $\overline{KT}$ *;* $\overline{IE} \perp \overline{KT}$	*1. Given*
2. $\overline{KX} \cong \overline{TX}$	*2. Midpoint Theorem*
3. $m\angle KXE = 90;\ m\angle TXE = 90$	*3. Definition of perpendicular lines*
4. $m\angle KXE = m\angle TXE$	*4. Substitution Property of Equality*
5. $\angle KXE \cong \angle TXE$	*5. Definition of congruence*
6. $\overline{EX} \cong \overline{EX}$	*6. Reflexive Property of Congruence*
7. $\triangle KXE \cong \triangle TXE$	*7. SAS Postulate*

Group Members _____

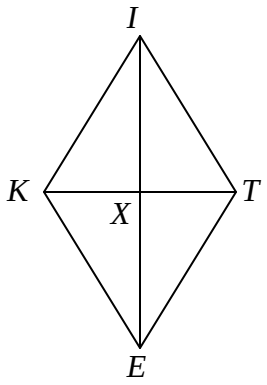
Date _____

Proving Triangles Congruent

Using the given diagram and information, prove two of the sides triangles congruent.

Given: X is the midpoint of $\overline{KT}$
$\overline{IE} \perp \overline{KT}$

Prove: $\overline{KI} \cong \overline{TI}$



Write your proof below. Be sure to include all logical reasoning.

Statements	***Reasons***
1. X is the midpoint of $\overline{KT}$ *;* $\overline{IE} \perp \overline{KT}$	*1. Given*
2. $\overline{KX} \cong \overline{TX}$	*2. Midpoint Theorem*
3. $m\angle KXI = 90;\ m\angle TXI = 90$	*3. Definition of perpendicular lines*
4. $m\angle KXI = m\angle TXI$	*4. Substitution Property of Equality*
5. $\angle KXI \cong \angle TXI$	*5. Definition of congruence*
6. $\overline{IX} \cong \overline{IX}$	*6. Reflexive Property of Congruence*
7. $\triangle KXI \cong \triangle TXI$	*7. SAS Postulate*
8. $\overline{KI} \cong \overline{TI}$	*8. CPCTC*

Group Members_____
Date _____

Use the following charts to record the measurement data from the triangles.

Which group did the three triangles come from? _____

Triangle # **1** Name: _____

Angle Name	Angle Measure	Side Name	Side Measure
1.		1.	
2.		2.	
3.		3.	

List the names of the angles and sides in order from largest to smallest on the lines below:

Angles _____ _____ _____
Sides _____ _____ _____

Triangle #2 Name: _____

Angle Name	Angle Measure	Side Name	Side Measure
1.		1.	
2.		2.	
3.		3.	

List the names of the angles and sides in order from largest to smallest on the lines below:

Angles _____ _____ _____
Sides _____ _____ _____

Triangle #3 Name: _____

Angle Name	Angle Measure	Side Name	Side Measure
1.		1.	
2.		2.	
3.		3.	

List the names of the angles and sides in order from largest to smallest on the lines below:

Angles _____ _____ _____
Sides _____ _____ _____

Unit 5, Activity 11, Angle and Side Relationships

Look at the measures of the angles and find the largest angle. Locate the side opposite the largest angle. How does the measure of the side opposite the largest angle compare to the measures of the other two sides?

Look at the measures of the sides and find the shortest side. Locate the angle opposite of the shortest side. How does the measure of the angle opposite the shortest side compare to the measures of the other two angles?

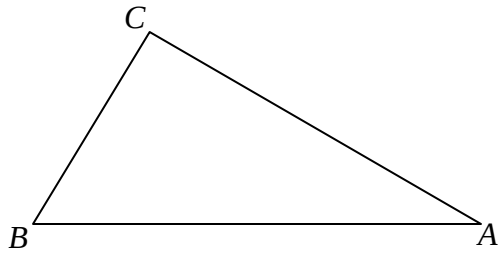
What conjecture can you draw from these observations?

Unit 5, Activity 11, Angle and Side Relationships Proof

Theorem: If one side of a triangle is longer than a second side, then the angle opposite the first side is greater than the angle opposite the second side.

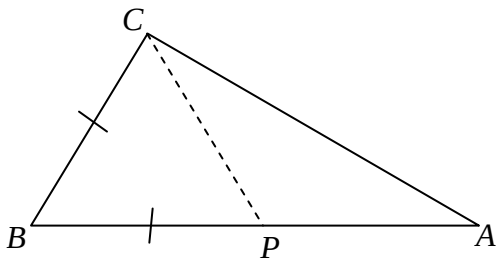
Given: $\triangle ABC$ and $AB > BC$

Prove: $m\angle BCA > m\angle BAC$



Proof:

Place P on side $\overline{AB}$ such that $\overline{PB} \cong \overline{BC}$ and draw $\overline{PC}$.



Now we know that $m\angle BCA = m\angle BCP + m\angle PCA$. Therefore, $m\angle BCA > m\angle BCP$. $\triangle BCP$ is isosceles so, $\angle BCP \cong \angle BPC$ which means that $m\angle BCA > m\angle BPC$ (by substitution). By definition, $\angle BPC$ is an exterior angle of $\triangle APC$, so it is greater than the remote interior angle BAC: $m\angle BPC > m\angle BAC$. So we have $m\angle BCA > m\angle BPC$ and $m\angle BPC > m\angle BAC$. By the transitive property for inequalities, it follows that $m\angle BCA > m\angle BAC$. $\angle BCA$ is the angle opposite the longer side, $\overline{AB}$ and $\angle BAC$ is opposite the shorter side, $\overline{BC}$. Thus the angle opposite the longer side is greater than the angle opposite the shorter side.

Unit 5, Activity 14, Quadrilateral Process Guide

Date_____
Name_____
Partner's Name_____

Use the following guide to investigate the relationships that occur in different convex quadrilaterals.

1. Which quadrilateral are you working with?

2. Measure all four angles and all four sides of the given quadrilateral and record the information below.

Angle Measures	Side Measures

3. Resize the quadrilateral by dragging the vertices. Measure the angles and sides again and record the information.

Angle Measures	Side Measures

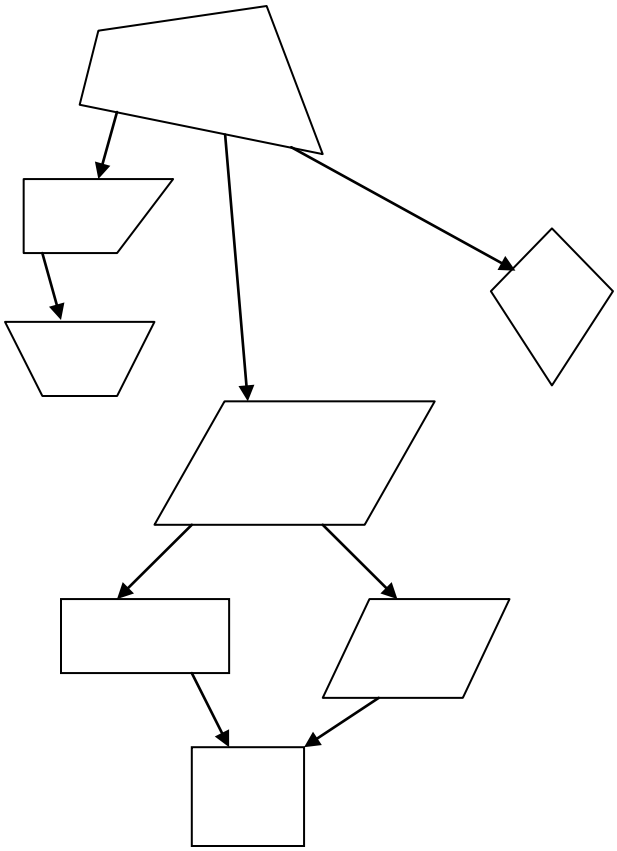
4. Continue to resize the quadrilateral and make measurements for this quadrilateral. After creating a minimum of 5 different sized quadrilaterals, make conjectures about the measures of the sides and angles of any quadrilateral of this type. You should have multiple conjectures.

5. Construct the diagonals of the quadrilateral and answer the following questions:
   a.) Do the diagonals bisect each other?
   b.) Are the diagonals congruent?
   c.) Are the diagonals perpendicular?
   d.) Do the diagonals bisect the angles of the quadrilateral?

Date_____
Name_____

Fill in the names of the quadrilaterals so that each of the following is used exactly once.

Parallelogram	Kite
Square	Quadrilateral
Trapezoid	Rectangle
Isosceles Trapezoid	Rhombus



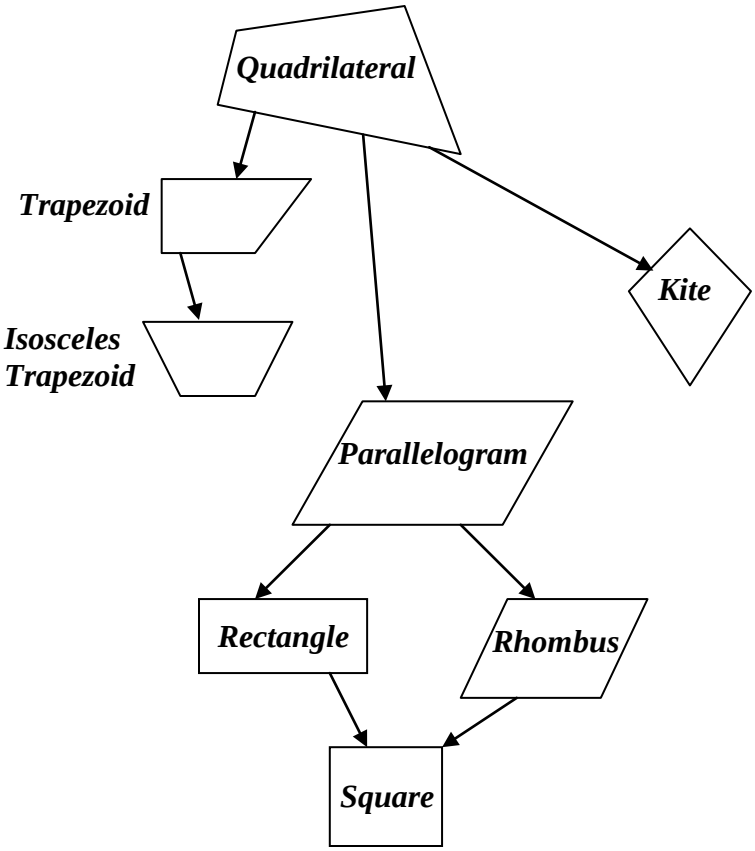
If you follow the arrows from top to bottom, the properties of each figure are also properties of the figure that follows it. For example, the properties of a parallelogram are also properties of a rectangle.

If you reverse the arrows from bottom to top, every figure is also the one that precedes it. For example, a square is also a rhombus and a rectangle since it is connected to them both.

Date_____
Name_____

Fill in the names of the quadrilaterals so that each of the following is used exactly once.

Parallelogram	Kite
Square	Quadrilateral
Trapezoid	Rectangle
Isosceles Trapezoid	Rhombus



If you follow the arrows from top to bottom, the properties of each figure are also properties of the figure that follows it. For example, the properties of a parallelogram are also properties of a rectangle.

If you reverse the arrows from bottom to top, every figure is also the one that precedes it. For example, a square is also a rhombus and a rectangle since it is connected to them both.

Instructions for Product Assessment
Activity 6

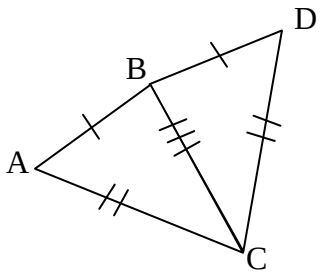
Your task is to design a tile in the 5-inch by 5-inch squares provided on the next two pages. There are two parts to this project.

Part I:
The drawings on your tile must meet certain specifications. You must have the following, and you will be graded on the accuracy of the following.

1.) 2 congruent obtuse triangles which demonstrate congruency by ASA
2.) 2 congruent scalene triangles which demonstrate congruency by SSS
3.) 2 congruent isosceles right triangles which demonstrate congruency by SAS
4.) 2 congruent acute triangles which demonstrate congruency by AAS
5.) 1 equilateral triangle

You should have a minimum of 9 triangles in your design (i. e. your two acute triangles CANNOT double as your two scalene triangles). You may add other shapes once you are sure you have the required 9 triangles above.

On Part I, you must label and mark each pair of triangles according to one of the methods indicated in the directions above (see example below).



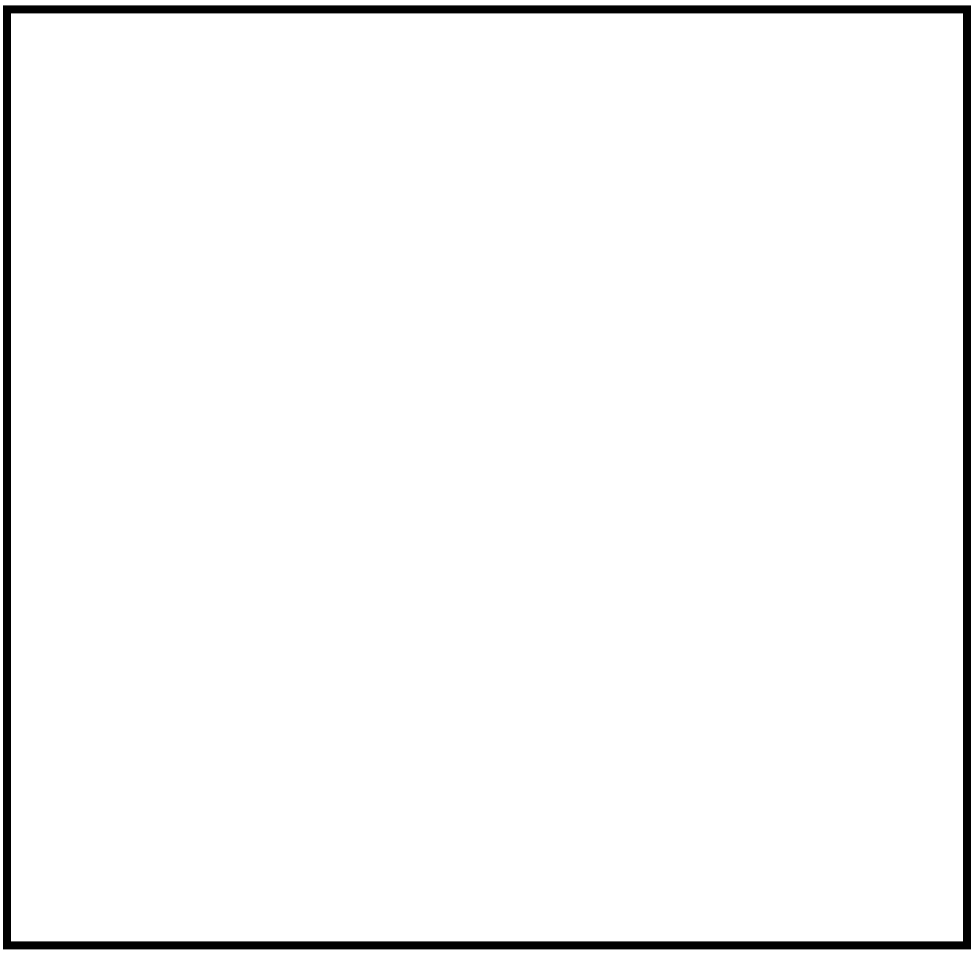
2 scalene triangles congruent by SSS

$\overline{AB} \cong \overline{DB}$
$\overline{AC} \cong \overline{DC}$
$\overline{BC} \cong \overline{BC}$
$\triangle ABC \cong \triangle DBC$

Part II
For Part II, you are to redraw your tile (without the markings and labels) in the square on the second page and COLOR it. Cut the tile out of the page and put your name, number and hour ON THE BACK! Do NOT glue it to another page, and do NOT staple it to part one. If you do not complete part two, the entire project will be returned to you, and you will lose one letter grade for each day late!!

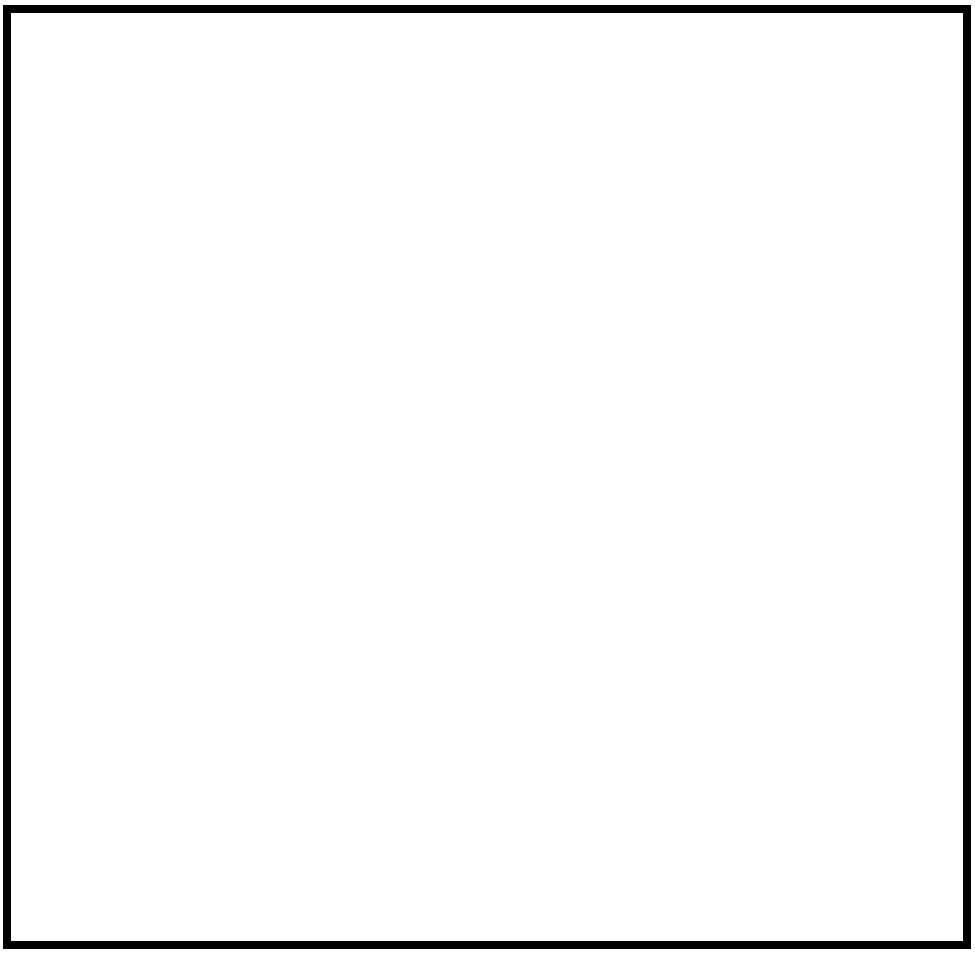
DUE DATE:

Part I



Obtuse Triangles (ASA)	Scalene Triangles (SSS)	Isosceles Right Triangles (SAS)
□ ≅ □ ≅ ≅ ≅	□ ≅ □ ≅ ≅ ≅	□ ≅ □ ≅ ≅ ≅
Acute Triangles (AAS)	Equilateral Triangle	
□ ≅ □ ≅ ≅ ≅		

Part II



Activity 6 Product Assessment Rubric

This is a checklist for evaluating your tile design. Your grade will be a percentage based on the number of requirements met.

Are the following present?	**40%**
1.) 2 congruent obtuse triangles	[ ] yes [ ] no
2.) 2 congruent scalene triangles	[ ] yes [ ] no
3.) 2 congruent isosceles right triangles	[ ] yes [ ] no
4.) 2 congruent acute triangles	[ ] yes [ ] no
5.) 1 equilateral triangle	[ ] yes [ ] no

Are the triangles marked by the correct method?	**40%**
6.) ALL triangles labeled	[ ] yes [ ] no
7.) Obtuse congruent by ASA	[ ] yes [ ] no
8.) Scalene congruent by SSS	[ ] yes [ ] no
9.) Isosceles right congruent by SAS	[ ] yes [ ] no
10.) Acute congruent by AAS	[ ] yes [ ] no

Are the congruent triangles and parts listed correctly (based on markings)?	**20%**
11.) Obtuse triangles and parts	[ ] yes [ ] no
12.) Scalene triangles and parts	[ ] yes [ ] no
13.) Isosceles right triangles and parts	[ ] yes [ ] no
14.) Acute triangles and parts	[ ] yes [ ] no
15.) Equilateral triangle	[ ] yes [ ] no

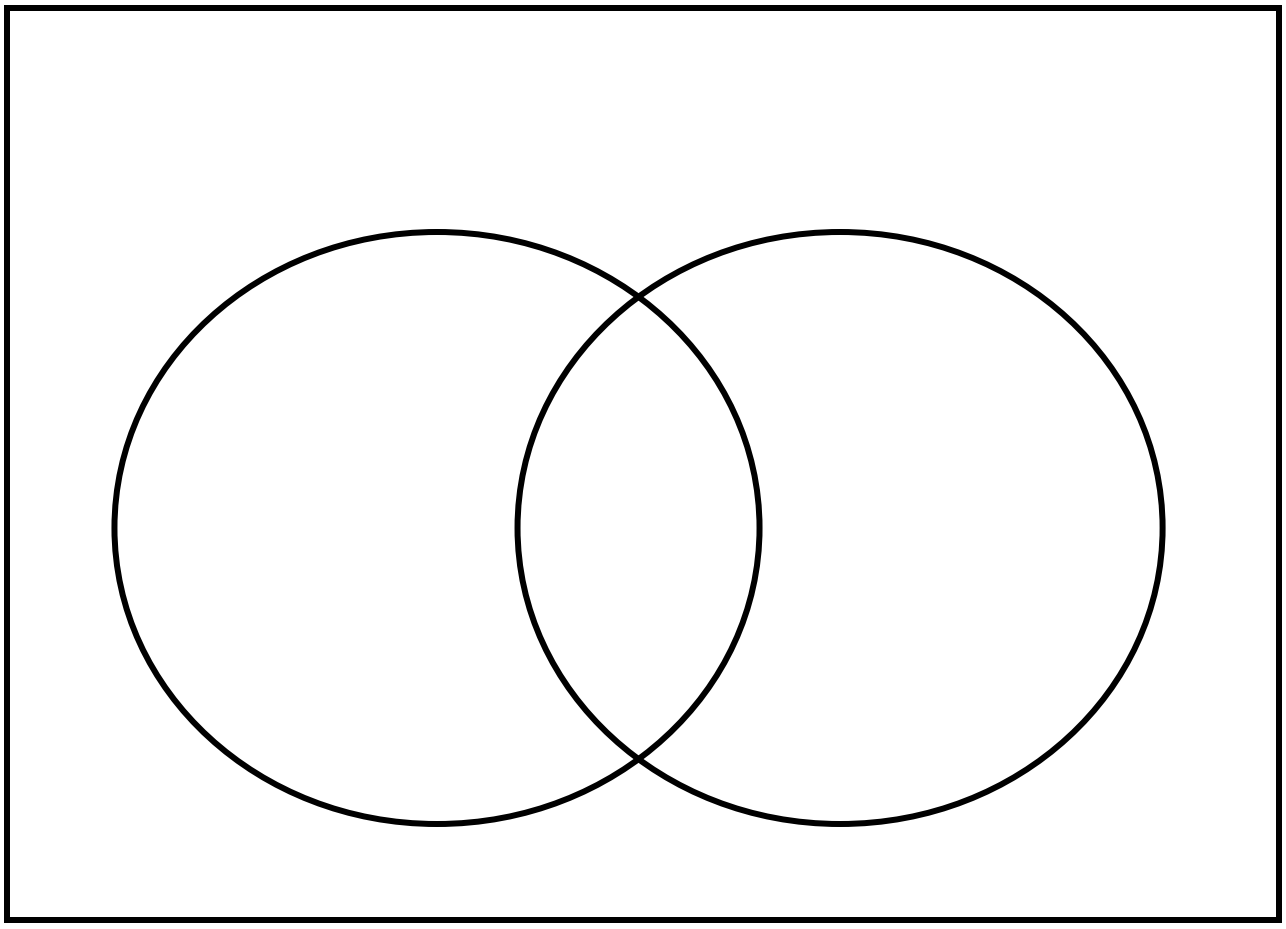
Following directions and promptness (for each "no" below, you will lose one percentage point):	
16.) Tile drawn on handout and name on handout	[ ] yes [ ] no
17.) Part two is colored	[ ] yes [ ] no
18.) Part two is cut out and NOT attached by staple or glue	[ ] yes [ ] no
19.) Name, number, and hour on back of part 2	[ ] yes [ ] no
20.) Rubric turned in	[ ] yes [ ] no
21.) Turned in on time	[ ] yes [ ] no

Score [4( ) + 4( ) + 2( )]/10 =

Venn Diagram for Assessment for Activity 14

Directions: Label the Venn diagram below with the name and the number representing the properties for parallelograms. Remember, in a Venn Diagram each property should only be listed once.

1.) Diagonals are perpendicular.
2.) All four angles are right angles.
3.) Opposite angles are congruent.
4.) Diagonals bisect a pair of opposite angles.
5.) Diagonals are congruent.
6.) Opposite sides are congruent.
7.) Diagonals bisect each other.
8.) All four sides are congruent.
9.) Opposite sides are parallel.
10.) Consecutive angles are supplementary.



Answer Key