

Lesson One

Triangle Inequality Theorem Practice 1

Please do these problems in your notebook.

Por favor haz este trabajo en tu cuaderno.

For problems 1 to 10:

Para los problemas del 1 al 10:

a. Write three inequalities

Escribe 3 inigualdades

b. Write a sentence to state whether the three lengths can form a triangle or not.

Escribe una oración para determinar si las tres medidas pueden formar un triángulo.

1) 15, 12, 9

2) 23, 16, 7

3) 20, 10, 9

4) 8.5, 6.5, 13.5

5) 47, 28, 70

6) 28, 41, 13

7) 5, 10, 15

8) 9, 40, 41

9) 12, 2.2, 14.3

10) 6, 9, 16

For problems 11 thru 18, determine the minimum and maximum length (whole number) necessary to form a triangle. Make sure and write one or two sentences to state your conclusions.

(ex. The maximum length needed to form a triangle is 8 units)

Para los problemas 11 al 18, determina la mínima y máxima medida necesaria para formar un triángulo. Asegúrate de escribir una o dos oraciones para declarar tu descubrimiento.

(ej. la longitud máxima necesaria para formar un triángulo es de 8 unidades)

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11) 9 and 15

12) 11 and 20

13) 23 and 14

14) 5 and 8

15) 15 and 18

16) 22 and 34

17) 47 and 71

18) 21 and 47

Problems 19-21: Please state your solution in a complete sentence (ex. It is not possible to form a triangle with these measurements because _____)

Por favor escribe su solución en una oración completa

(ej. No es posible formar un triángulo con estas medidas porque _____)

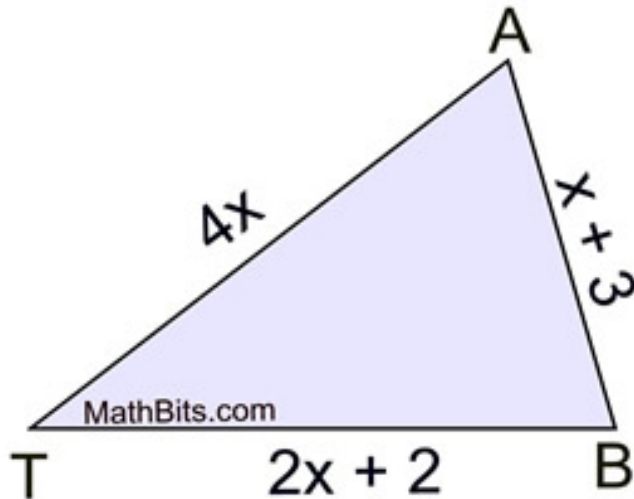
19. Juan, a set designer, has three wooden boards with the lengths of 19 feet, 13 feet, and 14 feet. Can Juan form a triangle with these boards? Why or why not?

Juan, un diseñador de decorados, tiene tres tablas de madera con longitudes de 19 pies, 13 pies y 14 pies. ¿Puede Juan formar un triángulo con estas tablas? ¿Por qué o por qué no?

20. Triangle TAB has a perimeter of 40cm. Do the measures of the sides actually represent the measures of the sides of a triangle? Why or why not?

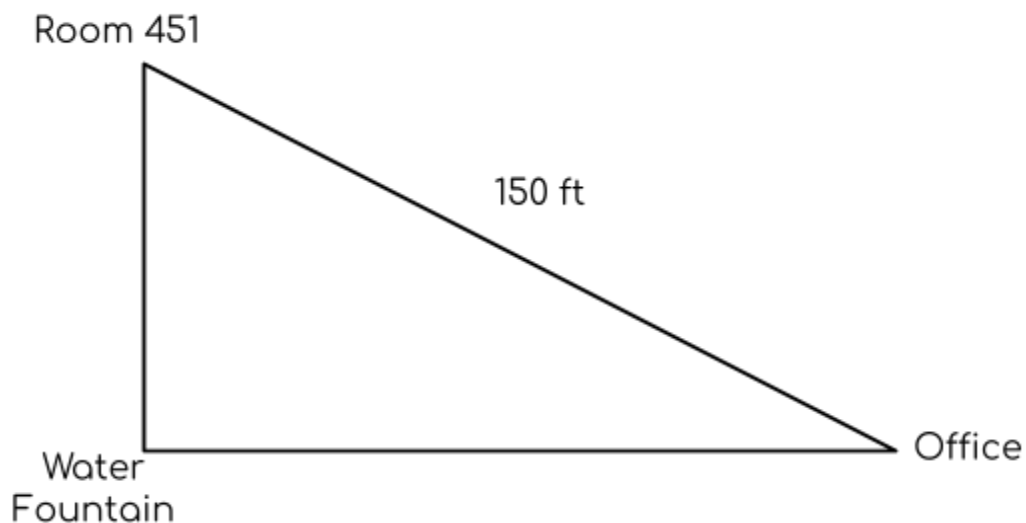
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El triángulo TAB tiene un perímetro de 40 cm. ¿Las medidas de los lados realmente representan los lados de un triángulo? ¿Por qué o por qué no?



21. Camille needs to walk from the LAHSA office to Room 451, but she needs to get water first. Will she need to walk further than 150 feet? Why or why not?

Camille necesita caminar desde la oficina de LAHSA hasta la habitación 451, pero primero necesita agua. ¿Necesitará caminar más de 150 pies? ¿Por qué o por qué no?



Lesson Two

Types of Triangles Graphic Organizer

Triangle	Definition Type/ Definition	Real Life Example (from Lesson)
Acute	Angle/A triangle where all three angles are less than 90°	<i>Doritos</i>
Right	Angle/A triangle where one angle is 90°	<i>Half a sandwich (cut diagonally)</i>
Obtuse	Angle/A triangle where one angle is greater than 90° .	<i>A very large slice of pie</i>
Equilateral	Sides/A triangle where all the sides are congruent.	<i>A yield sign</i>
Isosceles	Sides/A triangle where two sides are congruent	<i>A (triangular) flag</i>
Scalene	Sides/A triangle where all three sides are different lengths.	<i>A skateboard ramp</i>

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Classifying Triangles

Write a sentence stating whether the three measurements form a triangle that is acute, right, or obtuse.

Escribe una oración *para determinar si las tres medidas forman un triángulo agudo, recto, u obtuso.*

1. 15, 12, 9
2. 47, 28, 70
3. 8.5, 6.5, 13.5
4. 9, 40, 41
5. 11, 20, 15
6. $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$
7. 0.4, 0.75, 0.8
8. $\frac{\sqrt{2}}{2}$, $\frac{\sqrt{2}}{2}$, 1

Answer problems 9-15 with a sentence explaining your solution (ex. The triangle is a right triangle because ____)

Para problemas 9-15: escribe una oración explicando la solución (ej. El triángulo es un triángulo recto porque ____)

9. Marco draws a right triangle. The shortest side is 3 inches and the longest side is 5 inches. What is the length of the medium side?

Marco dibuja un triángulo recto. El lado más pequeño es 3 pulgadas, y el lado más grande es 5 pulgadas. ¿Cuál es la medida del lado medio?

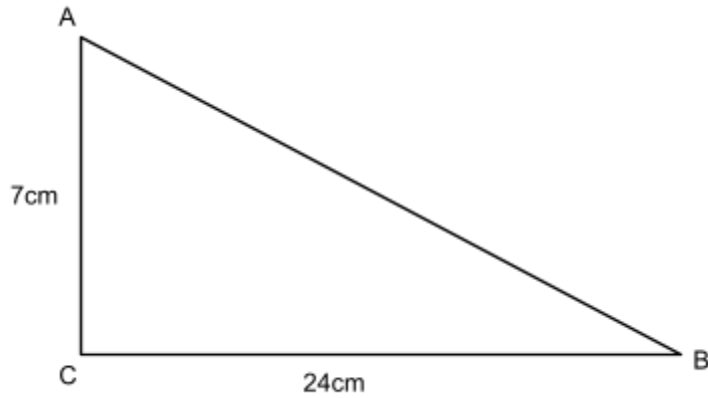
10. Heather draws a triangle where the shortest side is 2 inches and the longest side is 10 inches. The remaining side length is a whole number. What type of triangle is this?

Heather dibuja un triángulo que tiene lado más pequeño de 2 pulgadas, y lado más grande 10 pulgadas. El medido del lado restante es un número entero. ¿Qué tipo de triángulo es este?

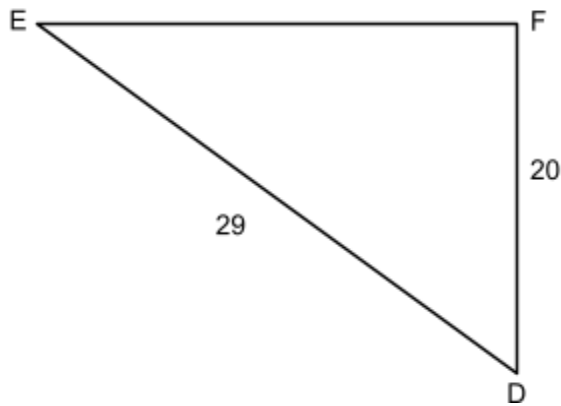
11. $\triangle ABC$ is a a right triangle. Find the missing side length.

$\triangle ABC$ es un triángulo recto. Encuentra la longitud lateral que falta.

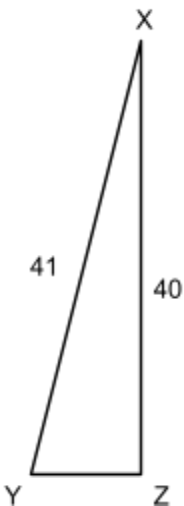
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12. $\triangle DEF$ is a right triangle. Find the missing side length.
 $\triangle DEF$ es un triángulo recto. Encuentra la longitud lateral que falta.



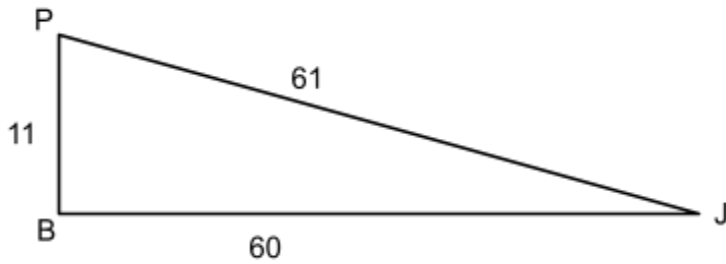
13. $\triangle XYZ$ is a right triangle. Find the missing side length.
 $\triangle XYZ$ es un triángulo recto. Encuentra la longitud lateral que falta.



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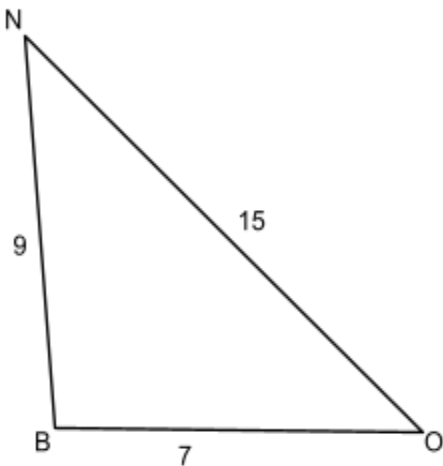
14. Undral says that $\triangle PBJ$ is a right triangle. She didn't measure any of the angles. How does she know?

Undral dice que $\triangle PBJ$ es un triángulo recto. No midió ninguno de los ángulos. ¿Cómo lo sabe?



15. Your eighth grade friend says that $\triangle NOB$ is a right triangle. Explain to him why he is wrong. Show your calculations.

Tu octavo grado dice que $\triangle NOB$ es un triángulo recto. Explíquele por qué se equivoca. Muestre sus cálculos.



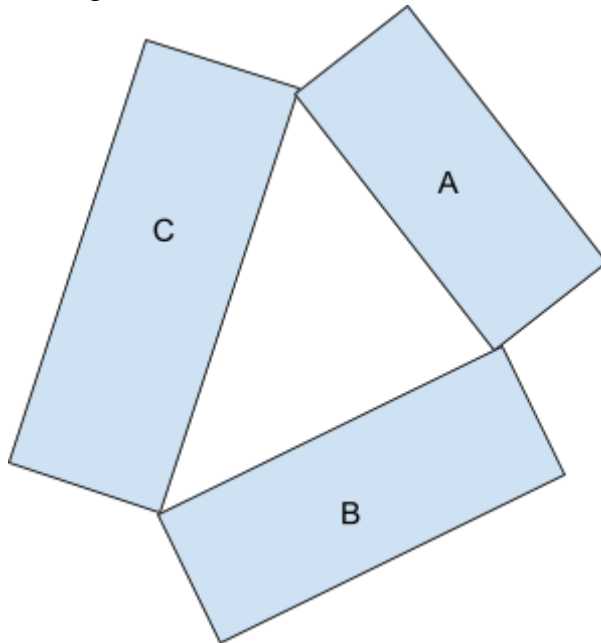
Congruent Triangles Activity

Instructions:

1. Pick a Partner A and a Partner B.
2. Partner A: Cut out the 3 rectangles and 3 angles on Page 1 of Lesson Resources. Partner B does Page 2.
3. Record the lengths, not widths, in inches, of A, B, C, D, E, and F. Which lengths are the same?

Part 1

1. Partner A: Place the A, B, and C together so that they form a triangle



2. Partner B: Place D, E, and F together so that they form a triangle.
3. Measure the angles of both triangles using a protractor and sketch the triangles in your notebook.

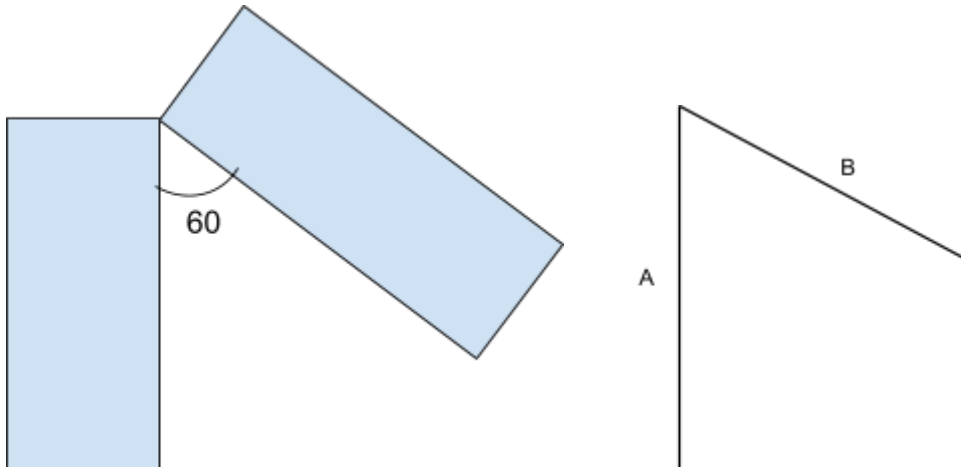
Questions: (please answer in notebook)

1. What are the measures of the 3 angles in the first triangle?
2. What are the measures of the 3 angles in the second triangle?
3. Are the triangles congruent? (or about congruent?)
4. Can the rectangles be rearranged to form a triangle with different angles? Why or why not?

Part 2

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1. Partner A: Place the 60° angle on your notebook, between A and B. Trace lengths of A and B in notebook and label the sides.
2. Partner B: Repeat step 1 using D and E.



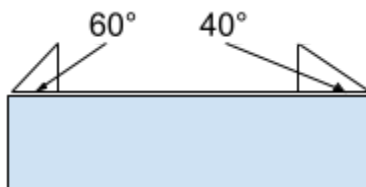
3. Both partners: Draw a line that connects the A & B/D & E.
4. Both partners: Measure the length of the 3rd side and the two remaining angles for each triangle.

Questions:

1. What is the length of the 3rd side?
2. What are the measures of the remaining angles?
3. Are the two triangles congruent? (or about congruent)
4. Use any two rectangles and any angle of your choice. Do you get the same result? Will you always get the same result? Why or why not?

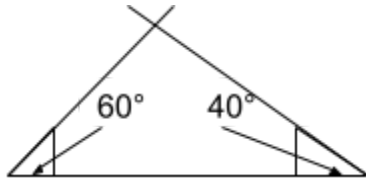
Part 3

1. Partner A: Place the 60° and 40° on top of A as shown below.
2. Partner B: Place the 60° and 40° on top of D as shown below.



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- Both Partners: Using a ruler, draw a segment along each of the angles. The two segments should intersect, forming the last angle.



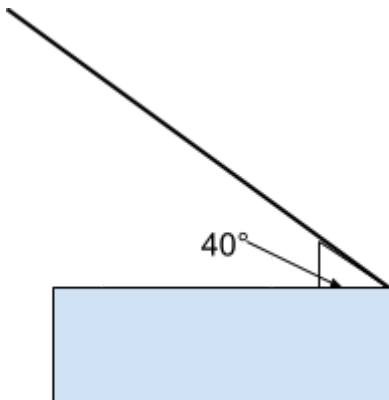
- Both partners: Measure the 3rd angle and the lengths of the 2 sides in each triangle. Sketch triangle into notebook.

Questions:

- What is the measure of the 3rd angle for each triangle?
- What are the measures of the remaining 2 sides for each triangle?
- Are the triangles congruent?
- What would happen if you used a different rectangle?

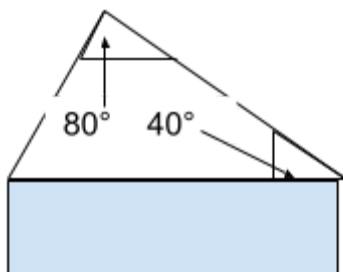
Part 4

- Use two of the angles used in Part 3.
- Partner A: Place the 40° alongside A. Draw a long segment like the one in the drawing.
- Partner B: Follow instruction for step 2 with D.



- Both Partners: Place the second angle along this segment so that when a 2nd segment is drawn, it will connect with the end of the rectangle. Repeat for the 2nd triangle.

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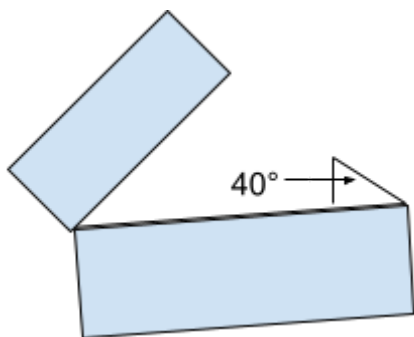
5. Both Partners: Measure the 3rd angle and the two remaining sides of each triangle.

Questions:

1. What is the measure of the 3rd angle for each triangle?
2. What are the measures of the remaining 2 sides for each triangle?
3. Are the triangles congruent?

Part 5

1. Partner A: Place A and B together, forming an angle of any degree for one triangle, and repeat the process for the 2nd triangle.
2. Partner B: Repeat first step using D and E.
3. Partner A: Place the 40° alongside A but, NOT in between the A and B.
4. Partner B: Repeat step 3 for D and E.



5. Both: Draw a segment to connect the 3rd side to the other two sides. Measure the 3rd side and the remaining 2 angles in each triangle.

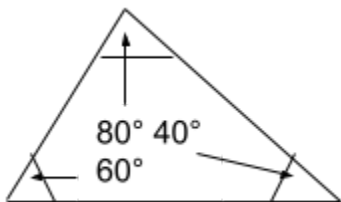
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Questions

1. What is the measure of the 3rd side for each triangle?
2. What are the measures of the remaining 2 angles for each triangle?
3. Are the two triangles congruent? Will they always be congruent? How do you know?
4. Do you think that you would have a different result if you used a different angle?

Part 6

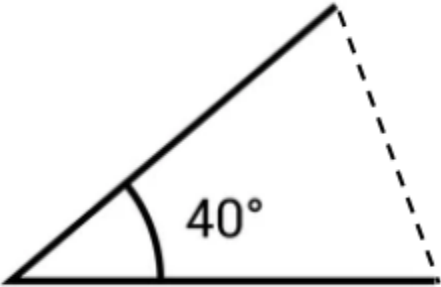
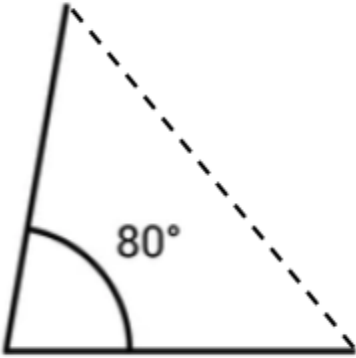
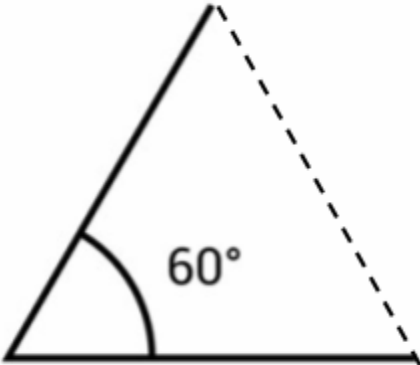
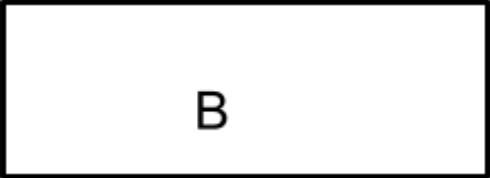
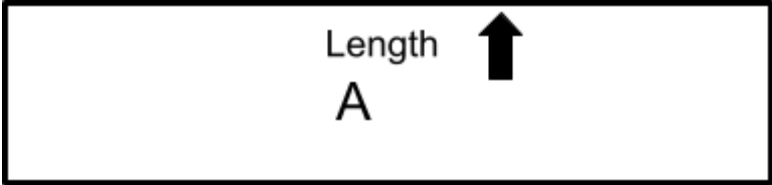
1. Partner A: Place the 3 angles so that they can form a triangle without measuring the sides initially. Draw segments connecting the angles.
2. Partner B: Repeat the process for the second triangle.

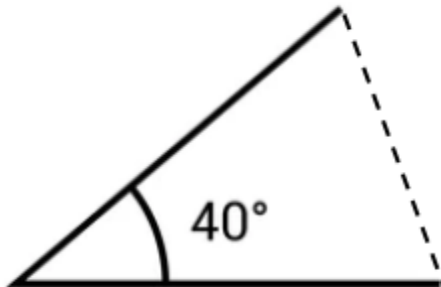
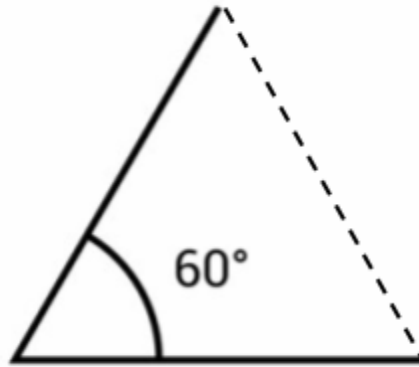
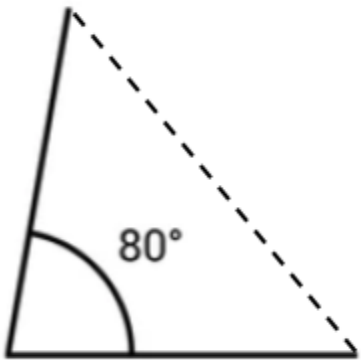
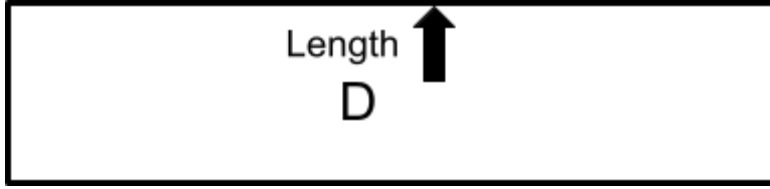


3. Both: Measure the 3 sides for each triangle.

Questions

1. What are the measures of the 3 sides for each triangle?
2. Are the two triangles congruent? Will they always be congruent? How do you know?





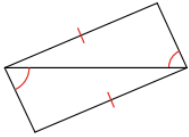
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Triangle Congruence Practice

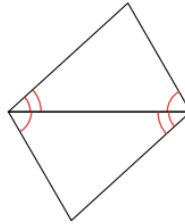
State if the two triangles are congruent. If they are, state how you know.

Estado si dos triángulos son congruentes. Si lo son, explica cómo lo sabes.

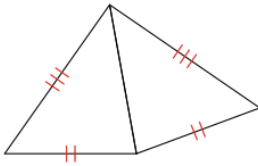
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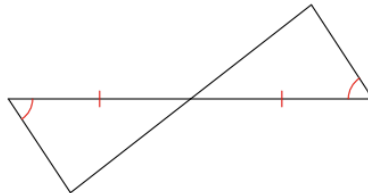
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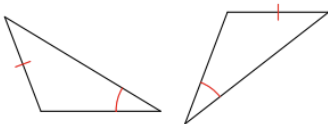
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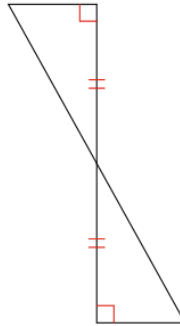
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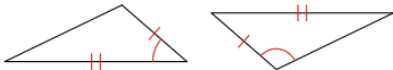
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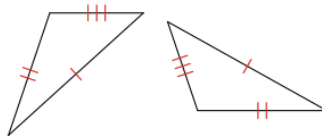
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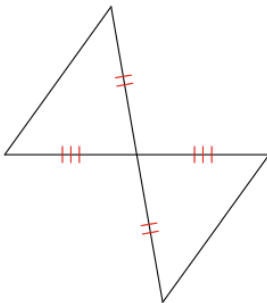
7)



8)



9)



10)

