

PART I: Identify symbols and their definitions

*Below is a set of common mathematical symbols. Your job is to match them to their definitions.
Are the symbols logical?*

Symbol	Matching definition	Definitions
1. =		A.) Absolute value - it is always equal to the positive value of the number inside the lines. It represents distance from zero.
2. $m\angle C$		B.) Congruent - Figures that are the same size and shape are said to be congruent.
3. \overline{GH}		C.) Parallel - used between segments, lines, rays, or planes
4. $\triangle ABC$		D.) Line segment with endpoints G and H. Line segments can be congruent to each other. You would not say they were equal.
5. \perp		E.) Ray GH - The letter on the left indicates the endpoint of the ray.
6. $\angle ABC$		F.) Used when comparing numbers of equal value.
7. \overleftrightarrow{GH}		G.) Plus or minus - indicates 2 values, the positive value and the negative value
8. \cong		H. Triangle ABC
9. \sim		J.) Indicates the measure of an angle. It would be set equal to a number.
10. $\overline{\perp GH}$		K.) Perpendicular - Lines, rays, segments, and planes can all be perpendicular
11. \overrightarrow{GH}		L.) Angle ABC - The middle letter is always the vertex of the angle.
12. \parallel		M. Similar - Figures that have been dilated are similar.
13. \pm		N.) The length of GH. It would equal a number.
14. $ x $		P.) Refers to the infinite line GH. Lines are not equal or congruent to other lines.

PART II: Rewrite the phrases below using correct mathematical symbols.

Example: Eleven plus eight is nineteen. $11 + 8 = 19$

- Triangle ABC is congruent to triangle GHJ. _____
- Segment BV is congruent to segment PR. _____
- Three feet are equal to one yard. _____
- Line TR is parallel to line segment WQ. _____
- Ray VP is perpendicular to segment GH. _____
- Angle 3 is congruent to angle 5. _____
- The distance between W and X is 7 feet. _____
- The length of segment AB is equal to the length of TR. _____
- The measure of angle SRT is equal to the measure of angle CDE. _____
- Explain when it is proper to use an equal sign and when it is proper to use the congruent symbol.

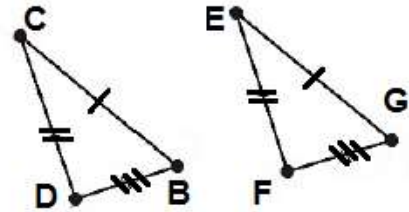
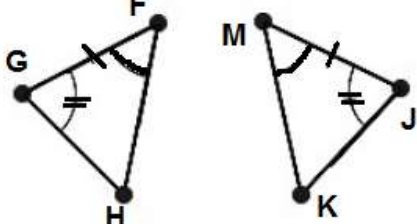
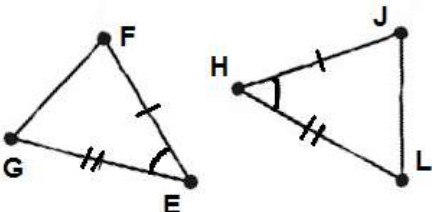
PART III. Triangle Congruence

Remember when you write a triangle congruence statement such as $\triangle ABC \cong \triangle FGH$, the corresponding parts of the two triangles are congruent. Complete the congruence statements below for this pair of congruent triangles.

- a) $\overline{AC} \cong$ _____ b) $\overline{FG} \cong$ _____ c) $\overline{GH} \cong$ _____
 d) $\angle CAB \cong$ _____ e) $\angle G \cong$ _____ f) $\angle GHF \cong$ _____

For the given information, complete the table with the congruence information, draw two representative congruent triangles and label the corresponding congruent parts. Write the triangle congruence statement. Identify the triangle congruence pattern. Remember the triangle congruence patterns

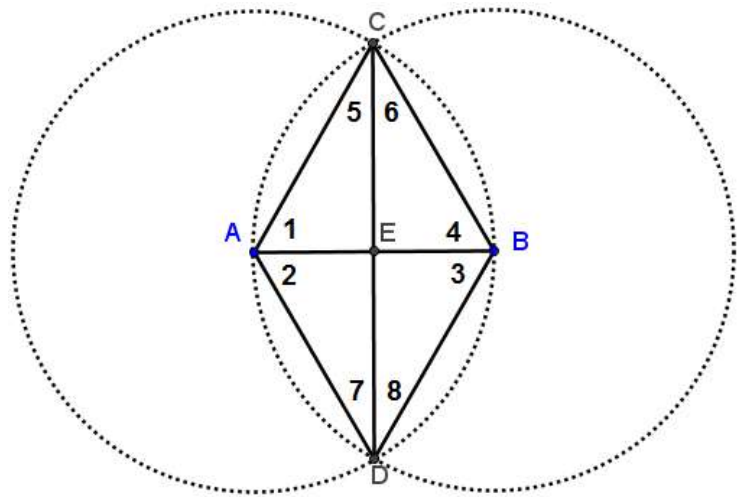
- 1) SSS **Side-Side-Side** 2) SAS **Side-Angle-Side** 3) ASA **Angle-Side-Angle**

Congruence Information	Draw and label two Congruent triangles	Write a triangle congruence statement	Identify the triangle congruence pattern
1 $\overline{ML} \cong \overline{ZJ}$ $\overline{LR} \cong \overline{JB}$ $\angle L \cong \angle J$			
2 $\overline{WB} \cong \overline{QR}$ $\overline{BP} \cong \overline{RS}$ $\overline{WP} \cong \overline{QS}$			
3 $\overline{EY} \cong \overline{BP}$ $\angle Y \cong \angle P$ $\angle E \cong \angle B$			
4			
5			
6			

PART IV:

It is given that circle A and circle B are congruent in the diagram at the right.

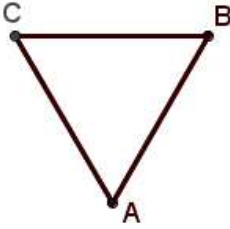

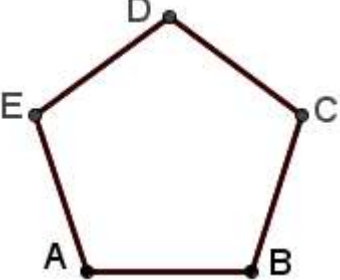
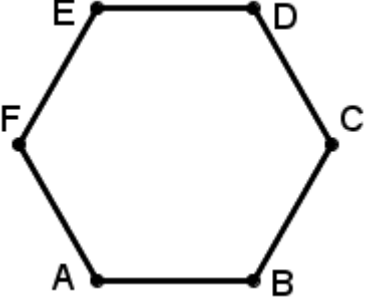
IN the table below, list as many facts as you can about the triangles, quadrilateral, diagonals of the quadrilateral, or angles. Given a reason why you know the fact is true.



MATHEMATICAL STATEMENTS Use correct mathematical symbols What you know is true.	REASONING & JUSTIFICATION Why you know it is true.
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PART V: Reasoning and Patterns

You know the Triangle Sum Property. Use this property to determine the sum of the measures of the angles in the following REGULAR polygons.

Polygon	Sum of the Measures of ALL of the interior angles	The measure of ONE interior angle	The measure of ONE exterior angle	Sum of the Measures of ALL of the exterior angles
 <p>Triangle</p>				
 <p>Square</p>				
 <p>Pentagon</p>				
 <p>Hexagon</p>				
<p>Octagon 8 - gon</p>				
<p>Decagon 10 - gon</p>				