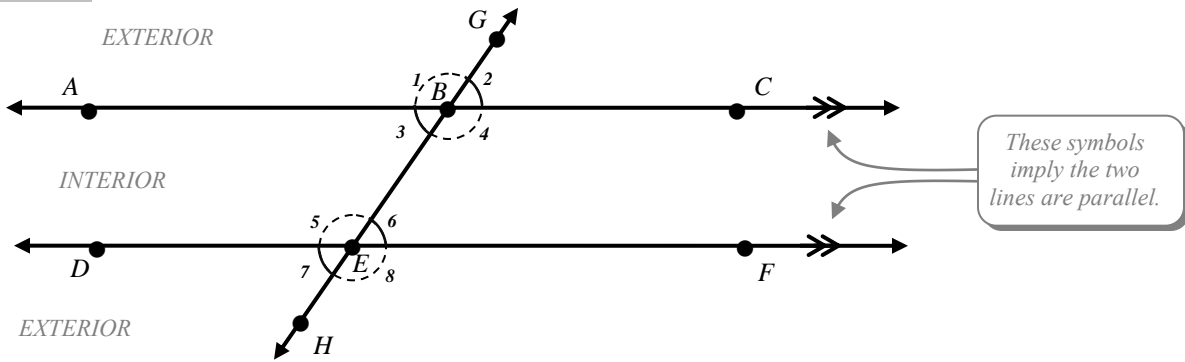


PARALLEL LINES



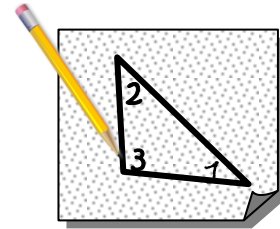
WORD BANK:

	$\angle GBC$	Consecutive Interior Angles
Alternate Interior Angles	$\angle 5$	
$\angle DEH$	Transversal	Congruent
$\angle HEF$	Vertical Angles	$\angle 4$
Corresponding Angles	Alternate Exterior Angles	
Supplementary	Consecutive Exterior Angles	$\angle ABG$

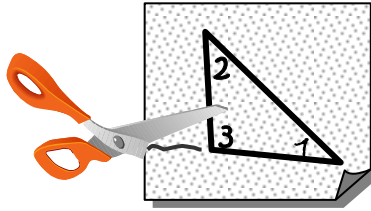
1. Give an alternate name for angle $\angle 2$ using 3 points: _____
2. Angles $\angle ABE$ and $\angle CBG$ can best be described as: _____
3. Angles $\angle 6$ and $\angle 3$ can best be described as: _____
4. The line \overleftrightarrow{GH} can best be described as a: _____
5. Which angle corresponds to $\angle DEB$: _____
6. Angles $\angle FEB$ and $\angle CBE$ can best be described as: _____
7. Angles $\angle 1$ and $\angle 8$ can best be described as: _____
8. Which angle is an alternate interior angle with $\angle CBE$: _____
9. Angles $\angle GBC$ and $\angle BEF$ can best be described as: _____
10. Angles $\angle 2$ and $\angle 8$ can best be described as: _____
11. Which angle is an alternate exterior angle with $\angle ABG$: _____
12. Which angle is a vertical angle to $\angle ABG$: _____
13. Which angle can be described as consecutive exterior angle with $\angle 1$: _____
14. Any two angles that sum to 180° can be described as _____ angles.

TRIANGLE'S INTERIOR ANGLE SUM

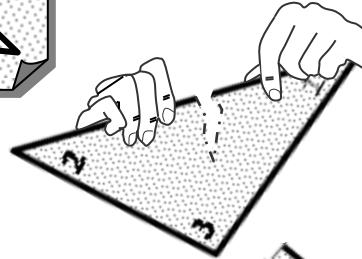
1. a. First, Create a random triangle on a piece of patty papers.
- b. Using your pencil, write a number inside each interior angle a label.



- c. Next, cut out the triangle.



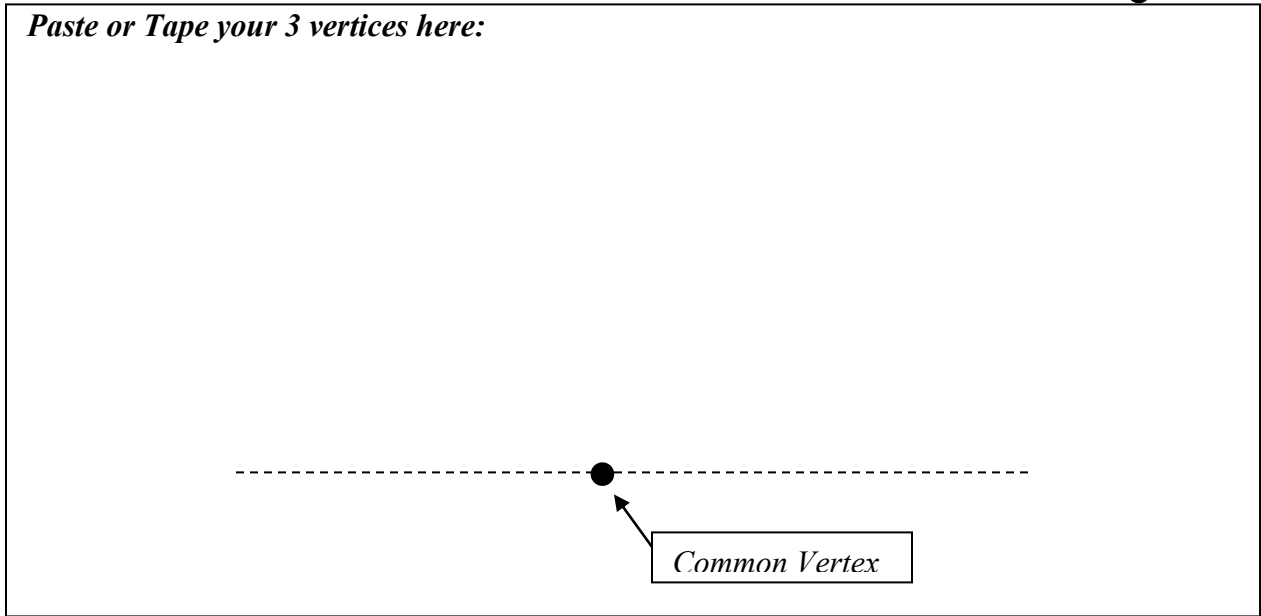
- d. Finally, tear off or cut each of the angles from the triangle



- e. Using tape, carefully put all 3 angles next to one another so that they all have the same vertex and the edges are touching but they aren't overlapping

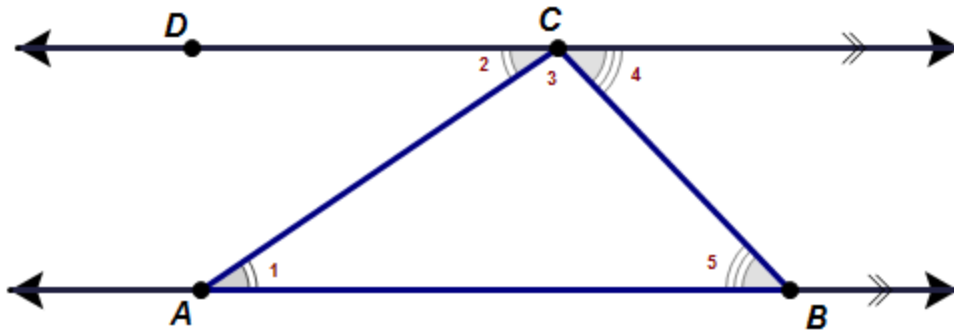


Paste or Tape your 3 vertices here:



2. What is the measure of a straight angle or the angle that creates a line by using two opposite rays from a common vertex?
3. Collectively does the sum of your 3 interior angles of a triangle form a straight angle? What about others in your class?
4. Make a conjecture about the sum of the interior angles of a triangle. Do you think your conjecture will always be true? (please explain using complete sentences)

5. More formally, why do the 3 interior angles of any triangle sum to 180° ?



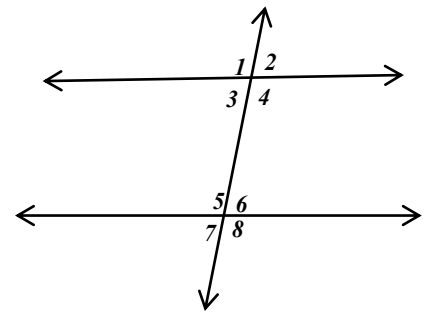
Consider $\triangle ABC$. The segment \overline{AB} is extended into a line and a parallel line is constructed through the opposite vertex. So, $\overrightarrow{AB} \parallel \overrightarrow{CD}$.

- Why is $\angle 1 \cong \angle 2$? _____
- Why is $\angle 5 \cong \angle 4$? _____
- Why is $m\angle 2 + m\angle 3 + m\angle 4 = 180^\circ$? _____
- Using substitution we can replace $m\angle 2$ with $m\angle 1$ and $m\angle 4$ with $m\angle 5$ to show that the interior angles of a triangle must always sum to 180° .

$$(\quad) + m\angle 3 + (\quad) = 180^\circ$$

Write the angle number in the ___ and then write the letter that corresponds with the number based on the code at the bottom in the box.

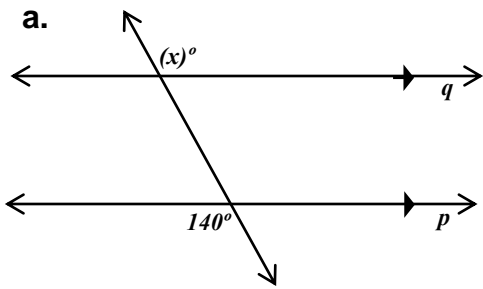
- Angle 2 and Angle ___ are alternate exterior angles.
- Angle 7 and Angle ___ are alternate exterior angles.
- Angle 4 and Angle ___ are corresponding angles.
- Angle 5 and Angle ___ are consecutive interior angles.
- Angle 3 and Angle ___ are alternate interior angles.
- Angle 7 and Angle ___ are consecutive exterior angles.
- Angle 6 and Angle ___ are vertical angles.
- Angle 2 and Angle ___ are a linear pair and on the same side of the transversal.
- Angle 1 and Angle ___ are corresponding angles.



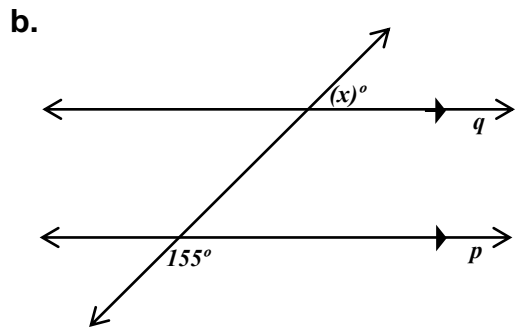
1=D	2=U	3=L	4=A	5=N	6=I	7=E	8=C
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What type of Geometry is this? _____

16. Given lines p and q are parallel, find the value of x that makes each diagram true.

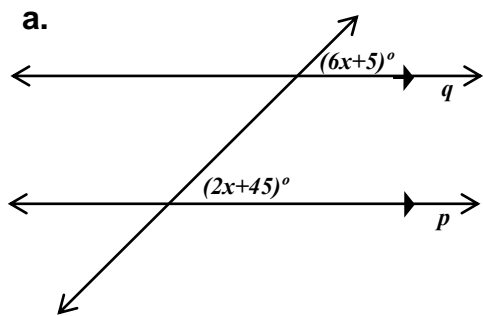


$x =$

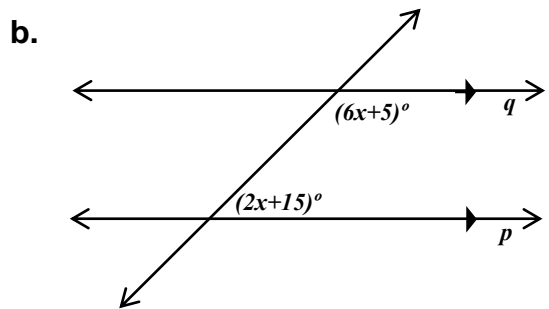


$x =$

17. Given lines p and q are parallel, find the value of x that makes each diagram true.

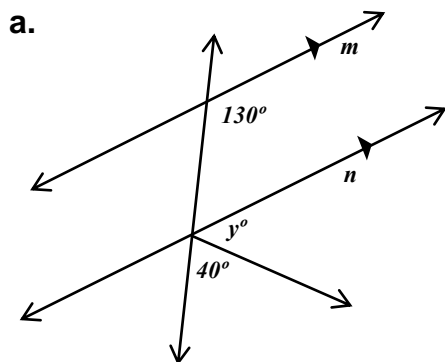


$x =$

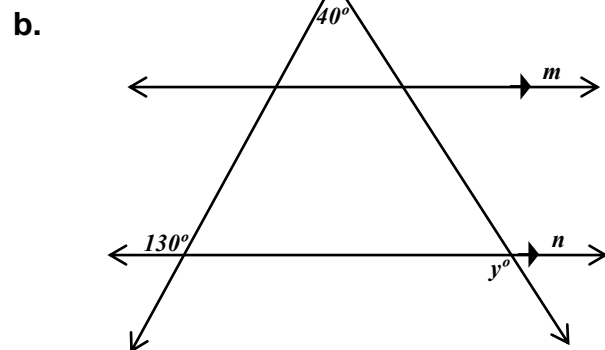


$x =$

18. Given lines m and n are parallel, find the value y of that makes each diagram true.



$y =$



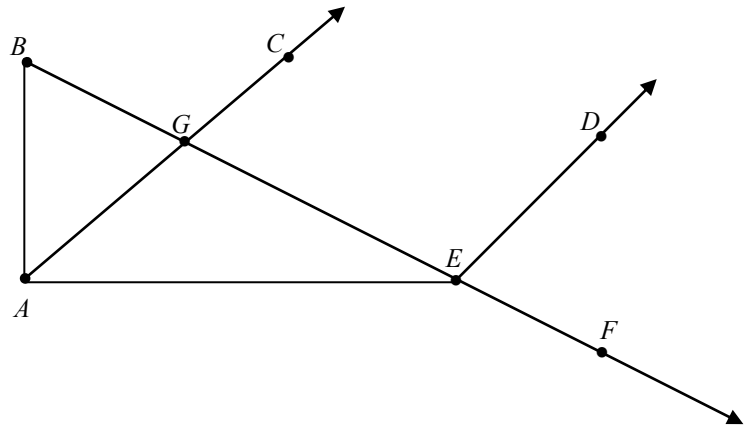
$y =$

19. ANGLE PUZZLE. Find $m\angle AEF$

Given:

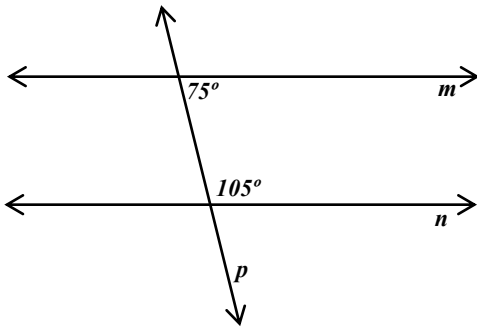
- $m\angle DEF = 85^\circ$
- $m\angle ABG = 50^\circ$
- $\angle BAE$ is a right angle
- $\angle CGE$ and $\angle DEG$ are supplementary

$m\angle AEF =$

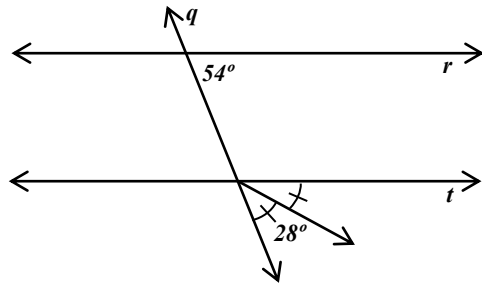


20. Converse of AIA, AEA, CIA, CEA. Which sets of lines are parallel and explain why?

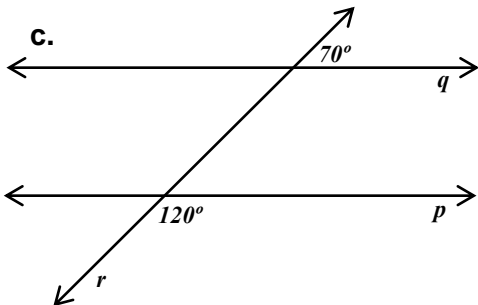
a.



b.



c.



d.

