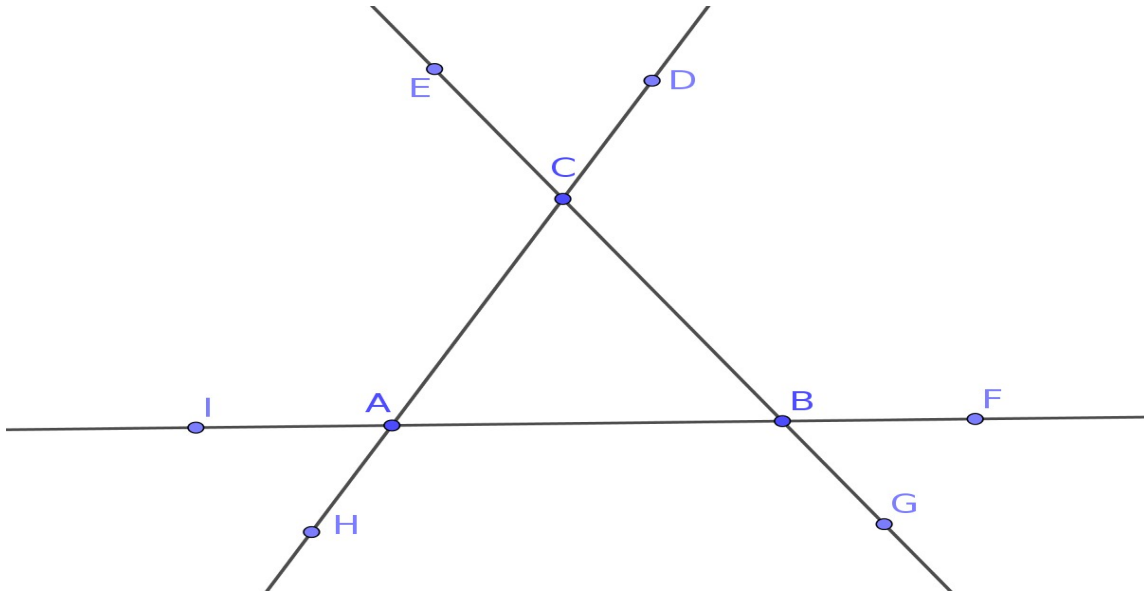


Introduction to Geometry: Properties of Triangles



1. Draw three intersecting lines and mark the points as shown. How many angles are there? Label and measure all the angles and write down the values of each angles. **Do not include straight angles.**

Which are acute angles?(angles less than 90°)		Which are obtuse angles?(angles greater than 90°)	
	Acute Angle names		Obtuse Angle names
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
8		8	

2. How many straight angles are there? Label them. (Clue: There are 12 straight angles)

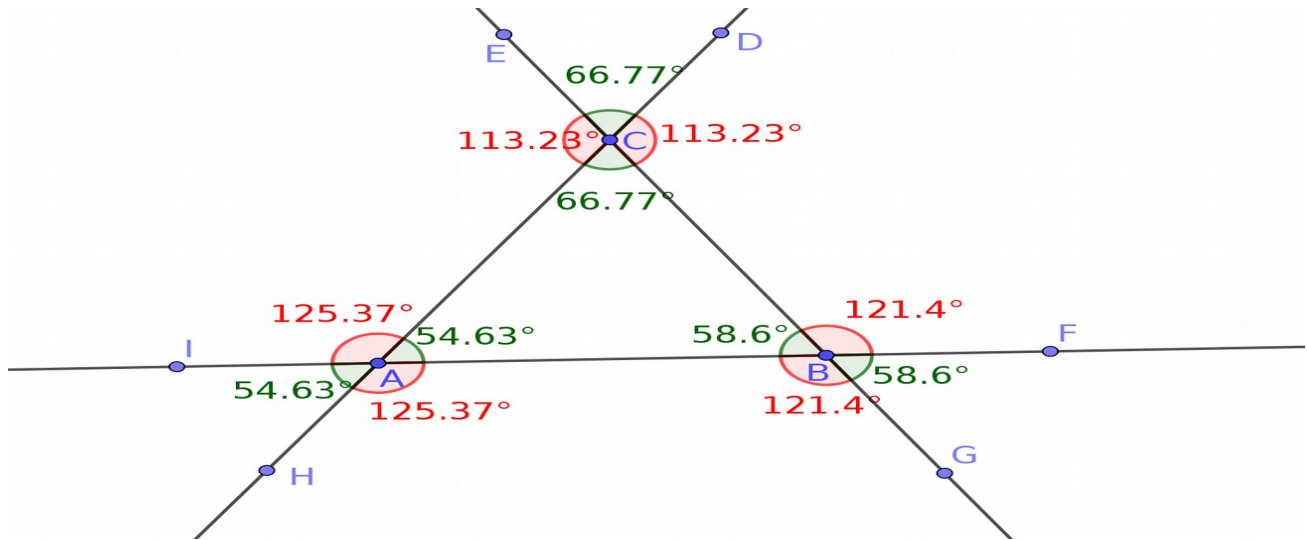
3. In the pair of angles below, please identify whether they are **Adjacent angles** and **Vertically opposite angles**? Put a tick mark against the correct answer.

	Adjacent angles	Vertically opposite angles
$\angle GBF$ and $\angle CBA$		
$\angle ABG$ and $\angle GBF$		
$\angle GBF$ and $\angle FBC$		
$\angle FBC$ and $\angle ABG$		
$\angle DCE$ and $\angle BCD$		
$\angle ACB$ and $\angle DCE$		
$\angle ECA$ and $\angle DCE$		
$\angle IAH$ and $\angle BAC$		
$\angle IAH$ and $\angle HAB$		
$\angle HAB$ and $\angle CAI$		
$\angle HAB$ and $\angle BAC$		
$\angle ECA$ and $\angle BCD$		
$\angle CBA$ and $\angle FBC$		
$\angle CAI$ and $\angle IAH$		
$\angle DCB$ and $\angle ACB$		

4. Which two angles form a **linear Pair**?(Circle the two angles that form a linear pair)

- (a) $\angle GBF$, $\angle FBC$ and $\angle BCD$
- (b) $\angle CAI$, $\angle BCD$ and $\angle DCE$
- (c) $\angle ECA$, $\angle DCE$ and $\angle CBF$
- (d) $\angle GBF$, $\angle IAH$ and $\angle HAB$
- (e) $\angle CAI$, $\angle CBA$ and $\angle BAC$
- (f) $\angle CBA$, $\angle ABG$ and $\angle ACB$
- (g) $\angle GBF$, $\angle BAC$ and $\angle ABG$
- (h) $\angle DCE$, $\angle BCD$ and $\angle IAH$
- (i) $\angle CBA$, $\angle DCE$ and $\angle FBC$

5. In this figure below, some angles outside the triangle are marked in red.They are called “exterior” angles to the triangle.For each of the exterior angles, find out if there is any connection with the angles of the triangle. For each angle in red, find out which two angles from the triangle, when added, will give the same value.



Sl.no	Angles See the figure and write down the value	Which two of the following angles, $\angle ACB$, $\angle BAC$ and $\angle CBA$ when added, will equal the angle in red?
1	$\angle FBC =$	
2	$\angle ECA =$	
3	$\angle HAB =$	
4	$\angle CAI =$	
5	$\angle BCD =$	
6	$\angle ABG =$	