

# Geometry

Terms

\* B is the vertex  
\* Vertex is always in the middle.

Lines



Angles

$$3 + 3 = 6$$

Yes because  $3 + 3 = 6$  &  $6$  is greater than  $5$ .

Triangles

Polygons & Quadrilaterals

### Point

- an exact location in space shown by a dot.



### Line Segment

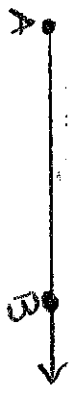
- a part of a line with two endpoints.



$\overline{AB}$   $\overline{BA}$

### Ray

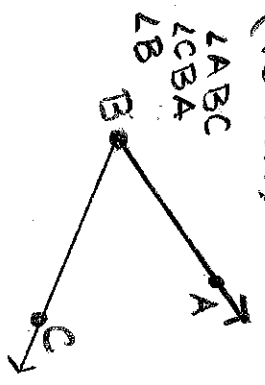
- a part of a line with one endpoint. (endpoint is always listed first.)



$\overrightarrow{AB}$

### Angle

- a figure formed by two rays that have a common endpoint. (vertex)

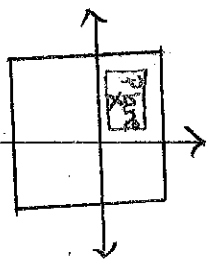


$\angle ABC$   
 $\angle CBA$   
 $\angle B$

\* B is the vertex  
\* Vertex is always in the middle.

### Plane

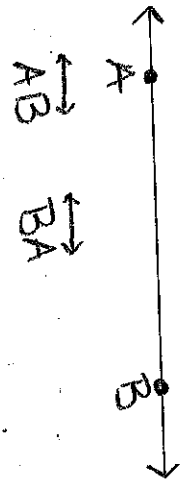
- a flat surface that extends without end.



Plane X

### Line

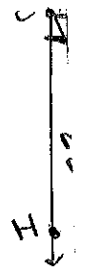
- a straight path in a plane without endpoints.



$\overleftrightarrow{AB}$   $\overleftrightarrow{BA}$

## Terms

### Lines



### Angles

$$3 + 3 = 6$$

$$6 > 5$$

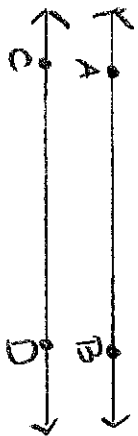
Yes because  $3 + 3 = 6$   
 $6$  is greater than  $5$

### Triangles

## Polygons + Quadrilaterals

## Parallel lines

- lines that never intersect.

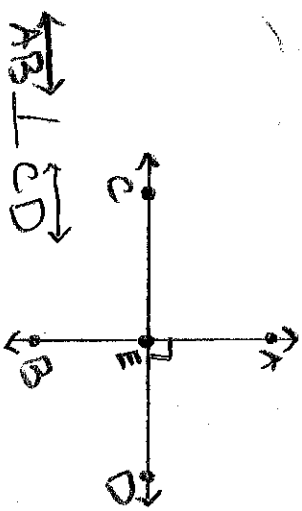


$$\vec{AB} \parallel \vec{CD}$$

## Same Plane

### Perpendicular lines

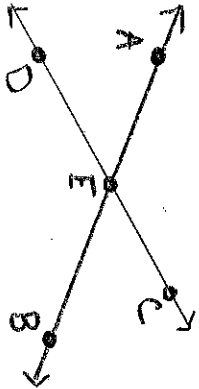
- two lines that intersect to form four right angles.



$$\vec{AB} \perp \vec{CD}$$

## Intersecting Lines

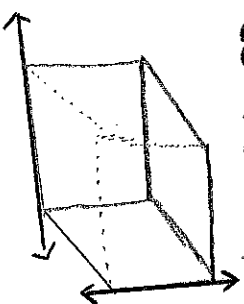
- lines that cross at exactly one point.



## Different Plane

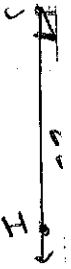
### Skew lines

- two non-parallel lines in space that do not intersect.



## Lines

## Angles



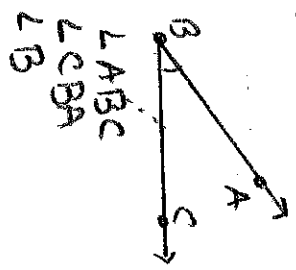
## Triangles

$$3 + 3 = 6$$

Yes because  $3 + 3 = 6$   
 $6$  is greater than  $6$

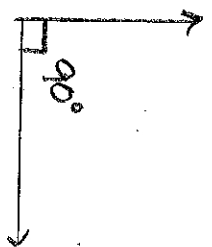
Acute

angle measure less than  $90^\circ$



Right

angle measure exactly  $90^\circ$



Obtuse

angle measure more than  $90^\circ$  but less than  $180^\circ$



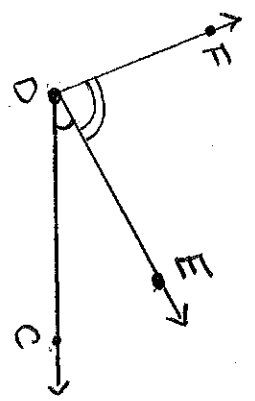
Straight

angle measure exactly  $180^\circ$



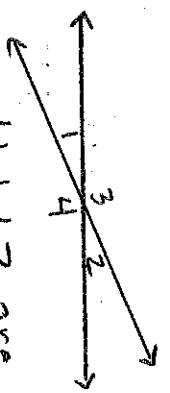
Adjacent

- 2 angles that share a side and a common vertex.



Vertical

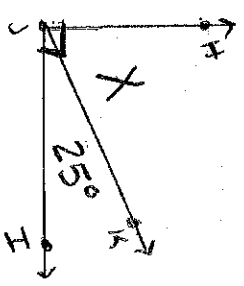
- 2 angles that are opposite angles. Formed by an intersection of two lines.



$\angle 1 + \angle 2$  are equal  
 $\angle 3 + \angle 4$  are equal  
 Vertical

Complementary

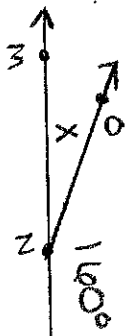
- 2 angles that add up to  $90^\circ$



$$\begin{array}{r} X + 25 = 90 \\ - 25 \quad - 25 \\ \hline X = 65 \end{array}$$

Supplementary

- 2 angles that add up to be  $180^\circ$



$$\begin{array}{r} X + 160 = 180 \\ - 160 \quad - 160 \\ \hline X = 20 \end{array}$$

Angles

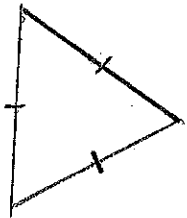
$$3 + 5 = 8$$

Yes because  $3 + 3 = 6$   
 $6$  is greater than  $5$

Triangles - Angles equal  $180^\circ$

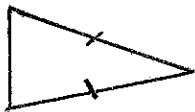
By Sides

Equilateral



- all sides are the same length.

Isoceles



- two sides are the same length.

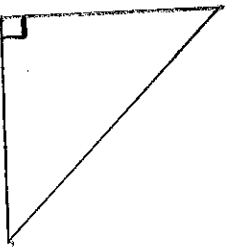
Scalene



- no sides are the same.

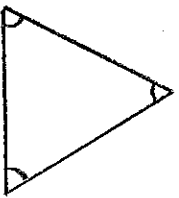
By Angles

Right



- has one right angle (the other two angles are acute).

Acute



- all angles are less than  $90^\circ$ .

Obtuse



- one angle is greater than  $90^\circ$ . Two angles are acute.

Triangle Inequality Theorem  
- states that the sum of the lengths of two sides of a triangle is greater than the length of the third side.

EX:

4cm, 5cm, 13cm

$4+5=9$

$9 < 13$

No because  $4+5=9$  +  $9$  is less than 13.

~~3in, 3in, 5in~~

~~$3+3=6$~~

~~$6 > 5$~~

Yes because  $3+3=6$   
 $6$  is greater than  $5$

Triangles

Polygons + Quadrilaterals

# Polygons

Closed - all sides are connected.

Regular - all sides are the same length.

- 3 sides - triangle
- 4 sides - quadrilateral
- 5 sides - pentagon
- 6 sides - hexagon
- 7 sides - heptagon
- 8 sides - octagon
- 9 sides - nonagon
- 10 sides - decagon

## Trapezoid



- 1 set of parallel lines

## Rectangle



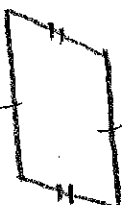
- a parallelogram with 2 sets of parallel lines
- opposite sides are congruent
- has 4 right angles

## Square



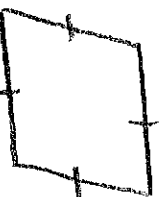
- a parallelogram, rectangle, rhombus
- 2 sets of parallel lines
- 4 right angles
- all 4 sides are congruent.

## Parallelogram



- 2 sets of parallel lines
- opposite sides are congruent

## Rhombus



- a parallelogram with 2 sets of parallel lines.
- all sides are congruent