

Good Morning – Geometry

Tuesday, September 20th

Homework

Corrections on Summer Assignment Test

- On separate paper, redo any problem where points were lost

Read Lesson 1.1, write vocabulary in your Pictionary Dictionary

Today's Agenda

SUMMER ASSIGNMENT TEST

Vocabulary

Geometry Vocabulary

Chapter 1

What is Geometry?

Geometry is the study of shapes

They studied Geometry in Ancient Mesopotamia & Ancient Egypt

Geometry is important in the creation of art and architecture.



Three basic building blocks of Geometry

The three basics building blocks of geometry are undefinable, however, they can be described and represented

- Point, line, plane



POINT

A POINT is the most basic building block of Geometry.

It has no size, only location.

It is represented with a dot and named with a capital letter.

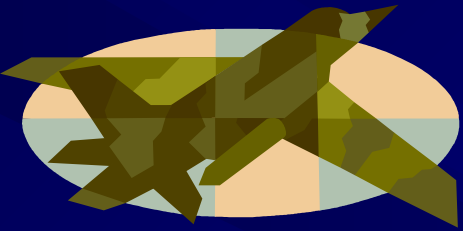
The Hershey Kiss represents a POINT on the line as does the red dot



LINE

- A LINE is straight continuous arrangement of infinitely many points
- It extends forever (infinitely) in two directions
- Name a line by giving the letter names of any two points on the line and placing the line symbol above the letters: $\overleftrightarrow{ED}$, $\overleftrightarrow{DE}$





PLANE

A PLANE has length and width, but no thickness
.(no, not the one that flies!)

It is a flat surface that extends infinitely along its length and width.

A plane is represented with a four-sided figure, usually a parallelogram.

A plane is named with a script capital letter, such as $\mathcal{P}$



Plane

Imagine sitting on a row boat in the middle of the ocean. No matter which way you look...all you see is water...forever



Definition

A statement that clarifies or explains the meaning of a word or a phrase

- *Square is a quadrilateral that is equiangular and equilateral.*



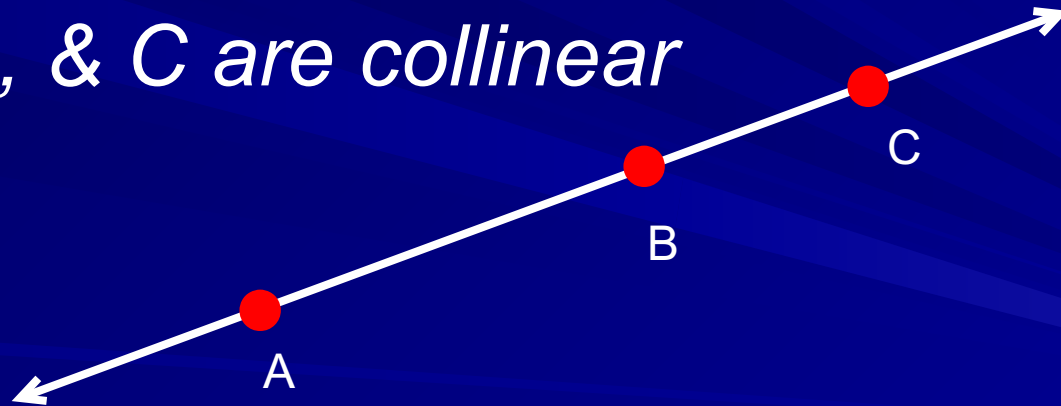
Collinear

Points on the same line

- co = together
- linear = pertaining to a line

On the line together

Points A, B, & C are collinear



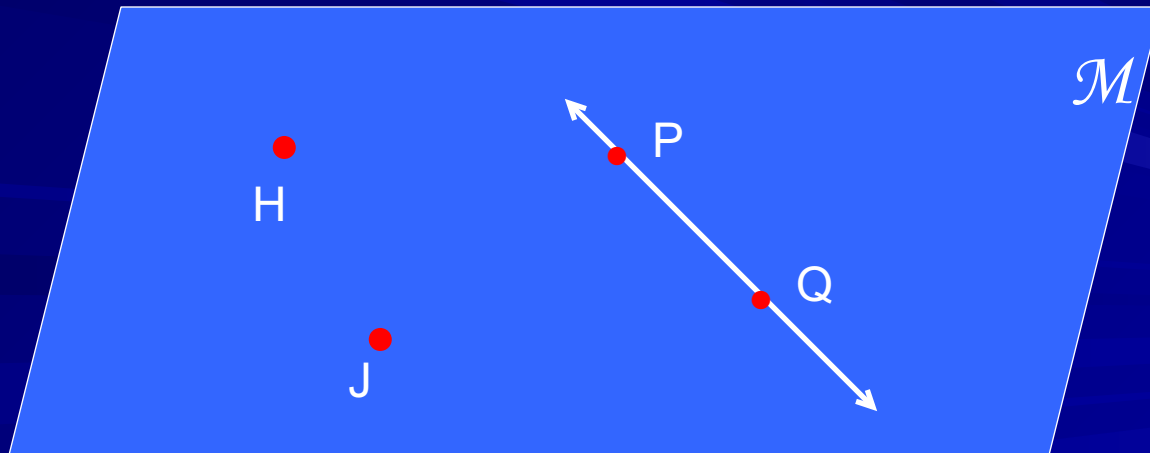
Coplanar

On the same plane

- co = together
- planar = pertaining to a plane

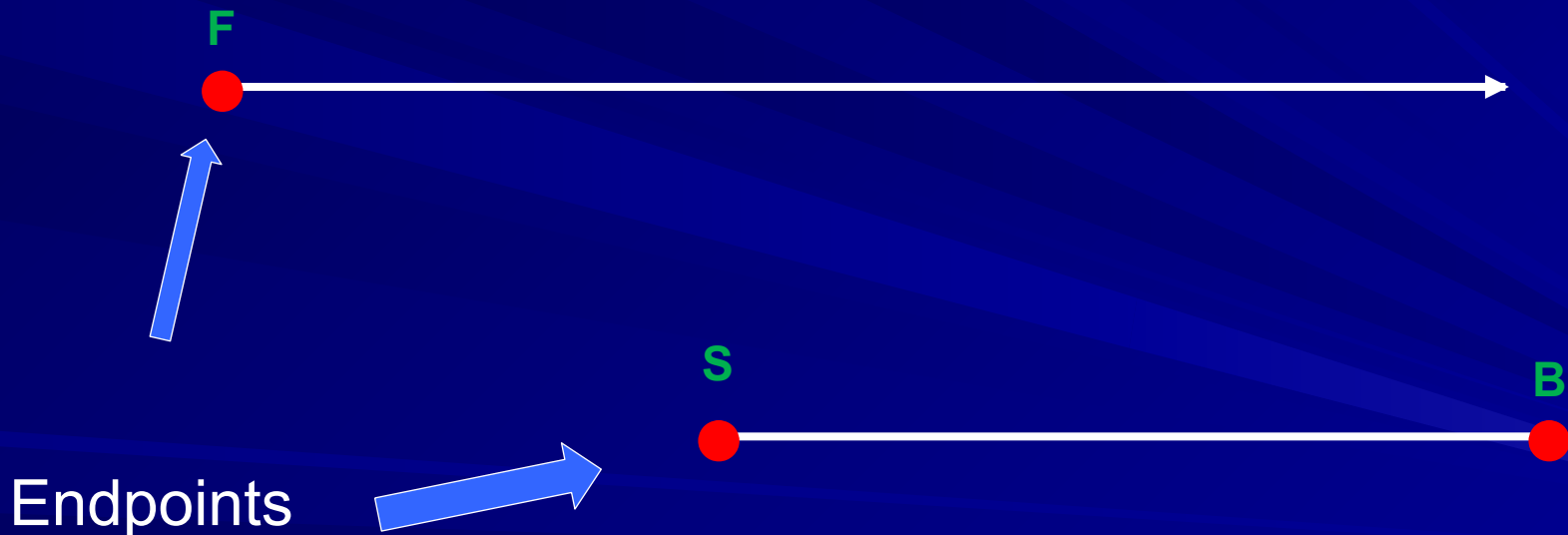
On the plane together

Points H & J and Line PQ are coplanar on $\mathcal{M}$



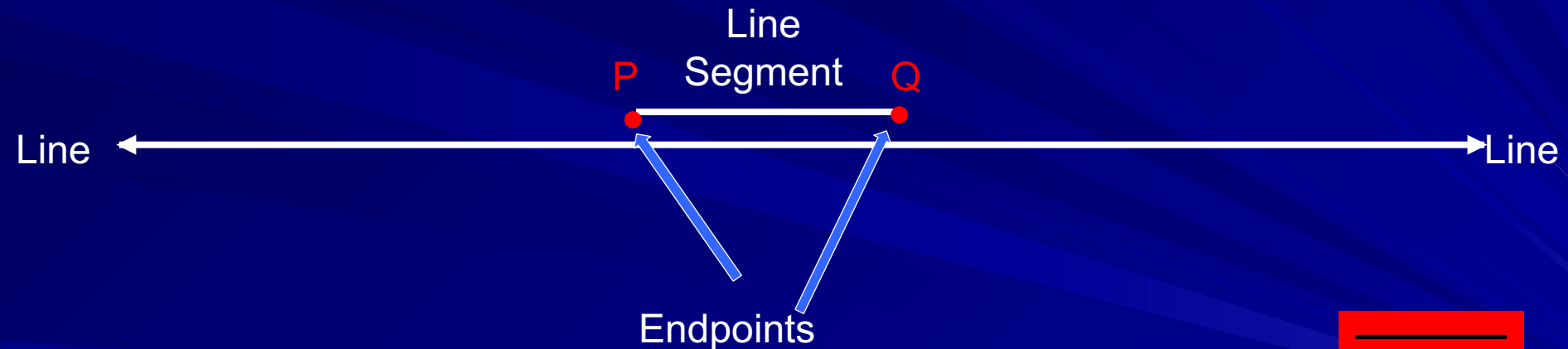
ENDPOINT

An ENDPOINT is a *point* at the end of a ray or line segment. (a capital letter)

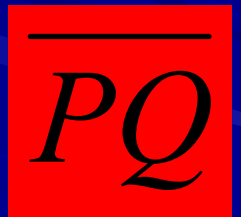


LINE SEGMENT

A LINE SEGMENT is *part* of a ray or line.
It has two endpoints



Name a line segment by its endpoints



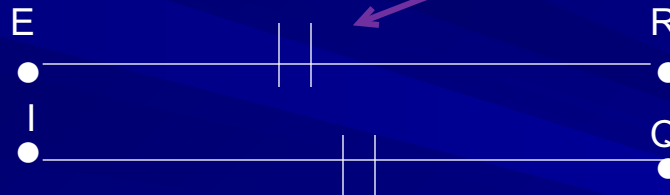
CONGRUENT $\cong$

CONGRUENT means the ***same size and same shape***

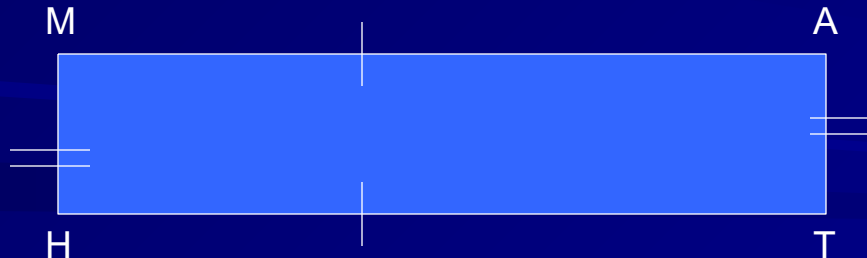
CONGRUENT LINE SEGMENTS means two line segments are the same size

- Show congruent segments by making identical markings on each.

$$\overline{ER} \cong \overline{IQ}$$



*Slash
or tick
marks*



$$\overline{MA} \cong \overline{TH}$$

$$\overline{MH} \cong \overline{AT}$$

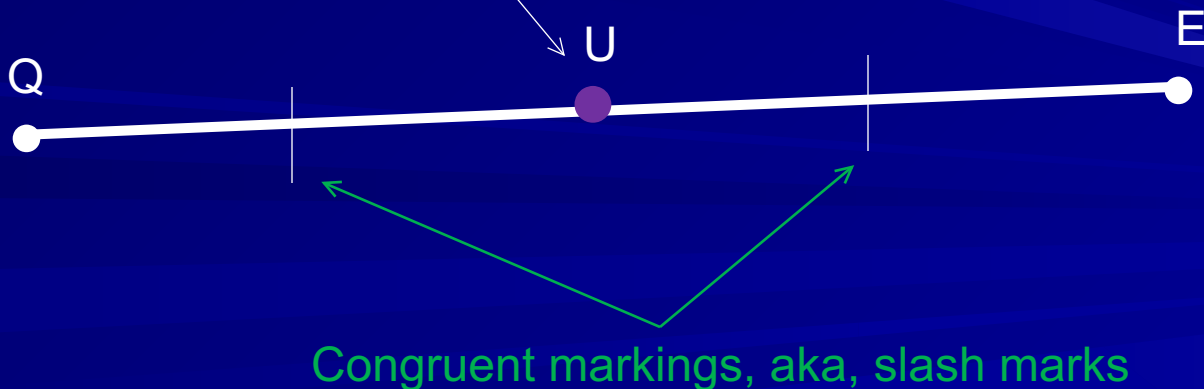
- Parts with the ***same amount*** of markings are congruent

Midpoint

Midpoint of a segment is the ***point*** on the segment that is the same distance from both endpoints

- bisects the segment
- divides the segment into two congruent segments

Congruent markings on a segment indicate a point is a **midpoint**



Midpoint of WHAT?

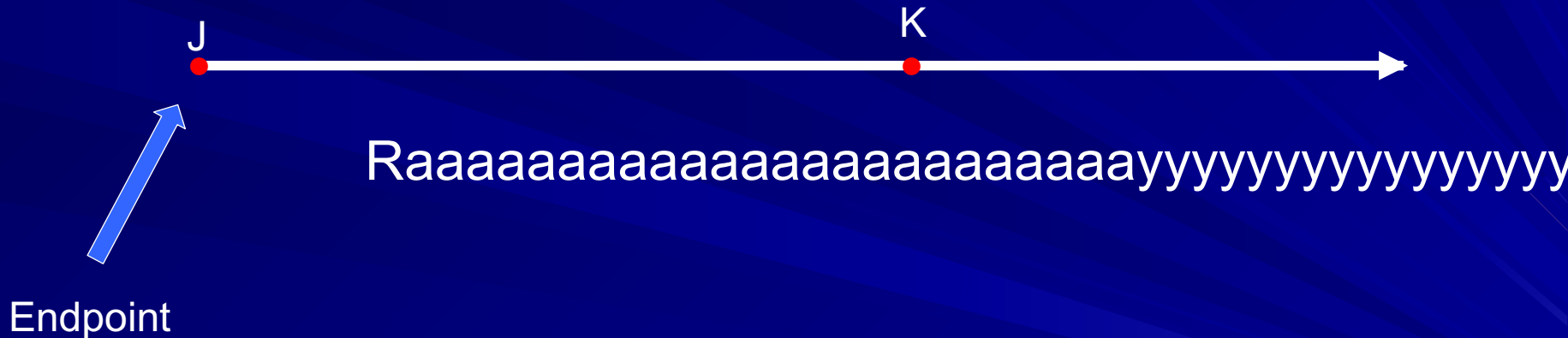
Can a point have a midpoint?

- a line?
- a square?
- a plane?

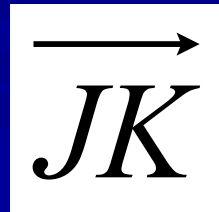
- NO, only a segment is finite in length
- There is NO midpoint to infinity

RAY

A RAY is part of a line, but it has one endpoint and the other end continues infinitely.

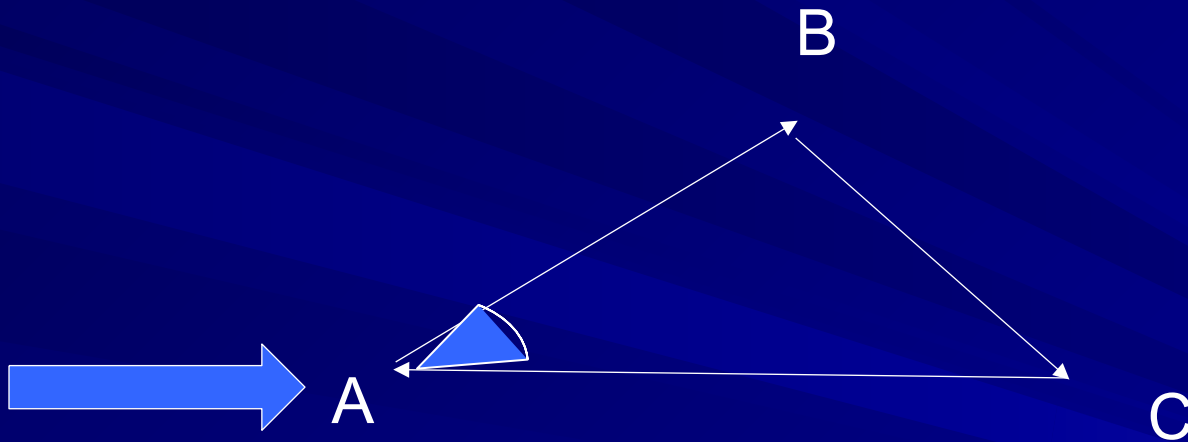


Name a ray with its *endpoint first*, followed by another point on the ray.



ANGLES

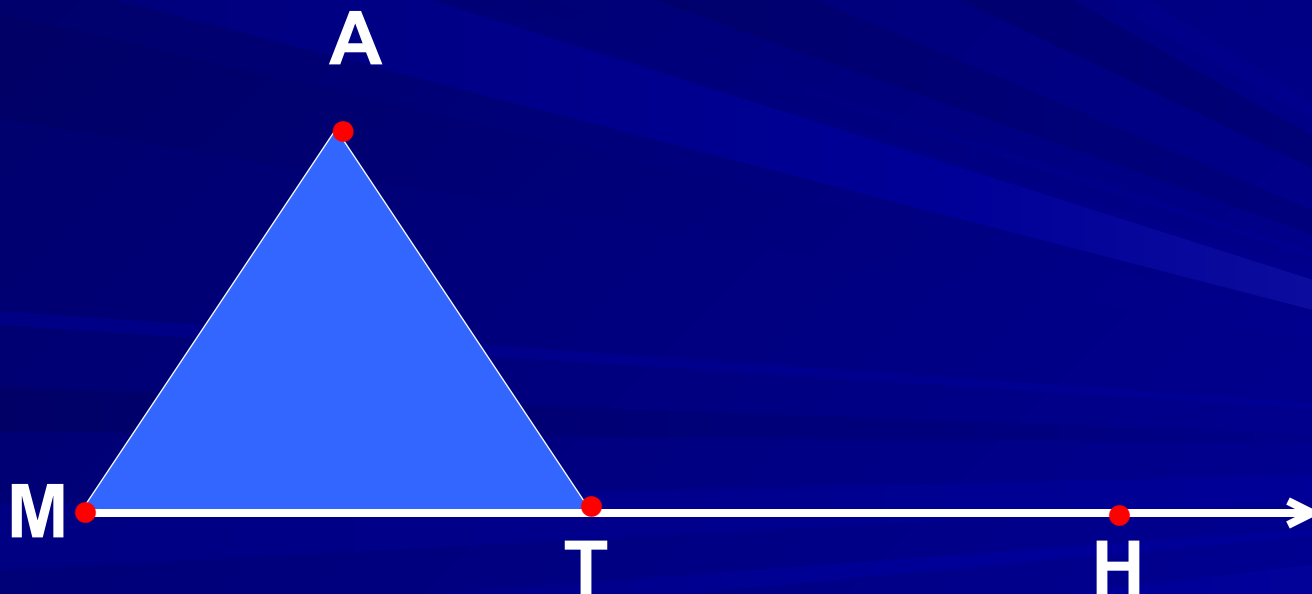
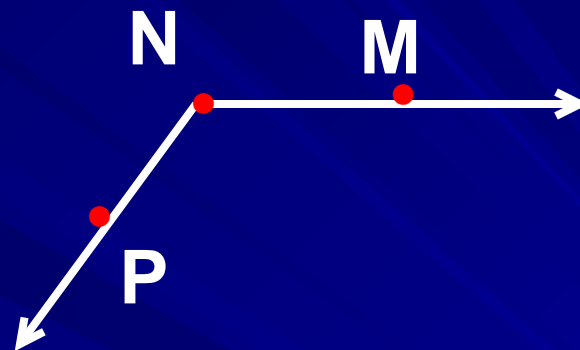
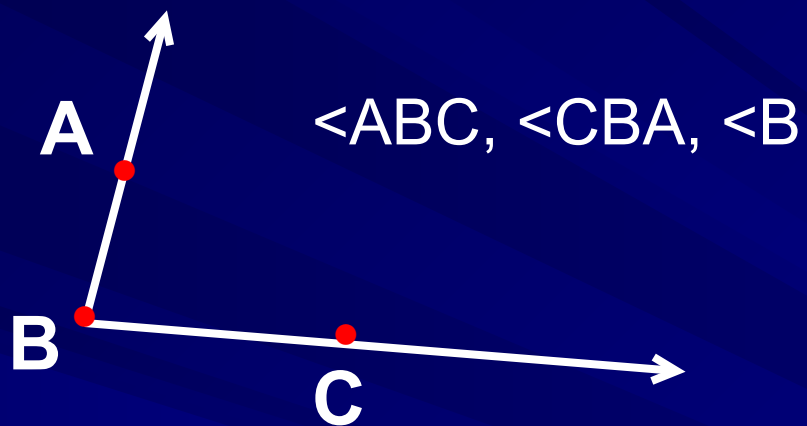
When you *name* an angle. The vertex/angle point goes in the middle of the name.



If I wanted to know the measurement of Angle A...I would ask: "What is the measurement for $\angle BAC$?"

(Notice A is in the center)

Naming Angles

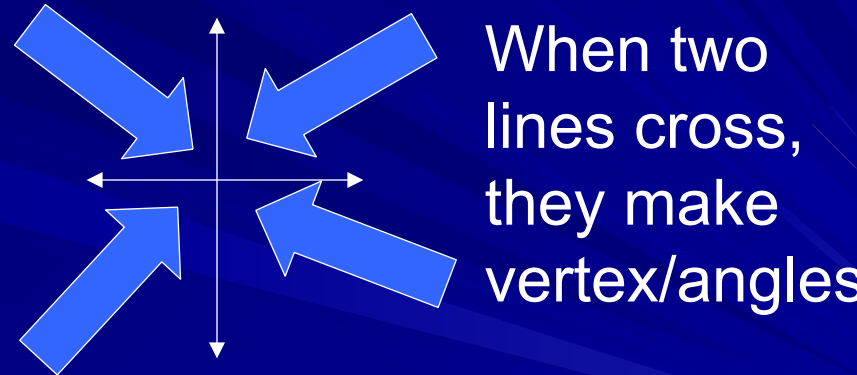
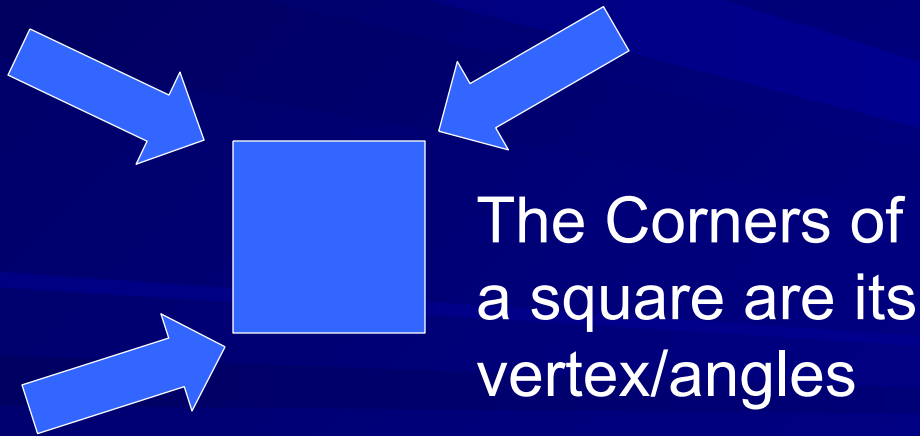


VERTEX

A VERTEX is a fancy name for “angle”

Two rays or lines that have the same endpoint make a VERTEX/angle

VERTEX/angles are measured in “degrees”



VERTICAL LINE

A VERTICAL LINE goes up & down



The candy bars are vertical

HORIZONTAL LINE

A HORIZONTAL LINE goes “across” (left and right)

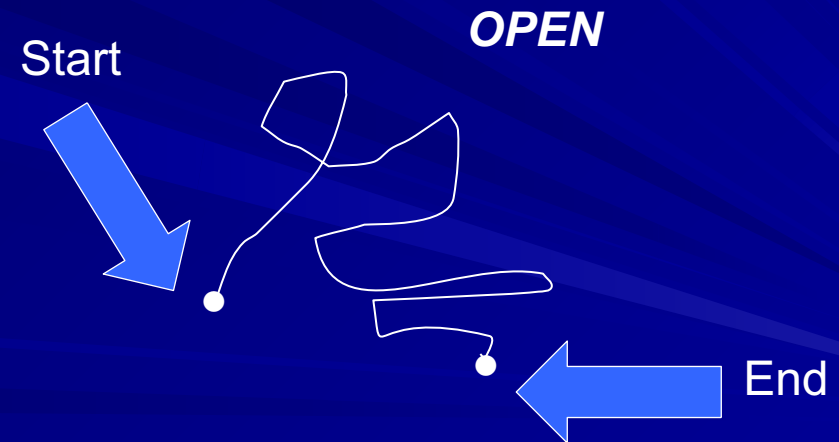
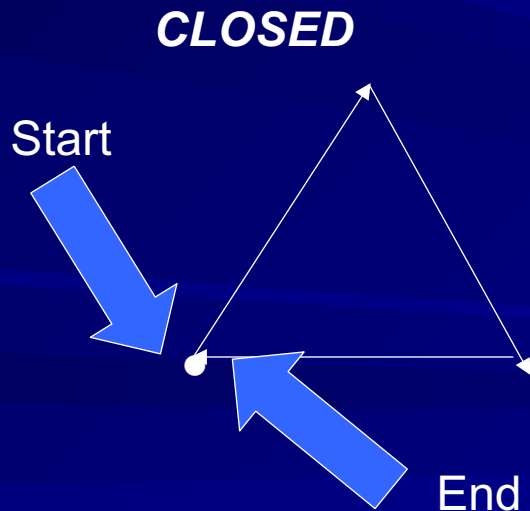


The candy
bars are
Horizontal

OPEN & CLOSED FIGURES

A CLOSED FIGURE/SHAPE starts and ends at the same point.

An OPEN FIGURE/SHAPE does NOT start and end at the same point.



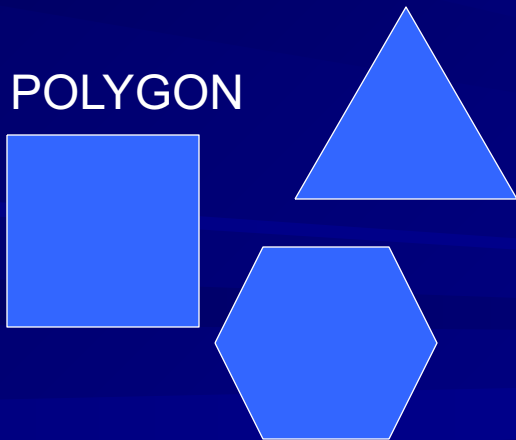
POLYGON

A POLYGON is a “closed” shape

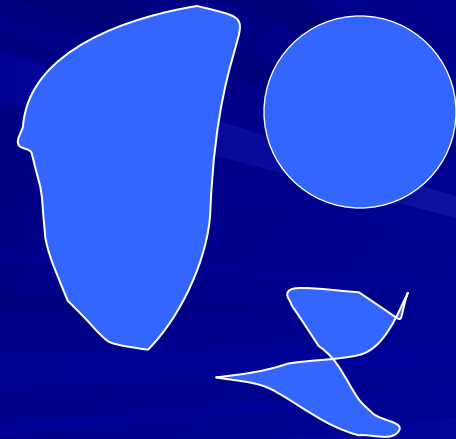
A POLYGON is made up of line segments that do not cross.

The number of sides gives a POLYGON its name

POLYGON

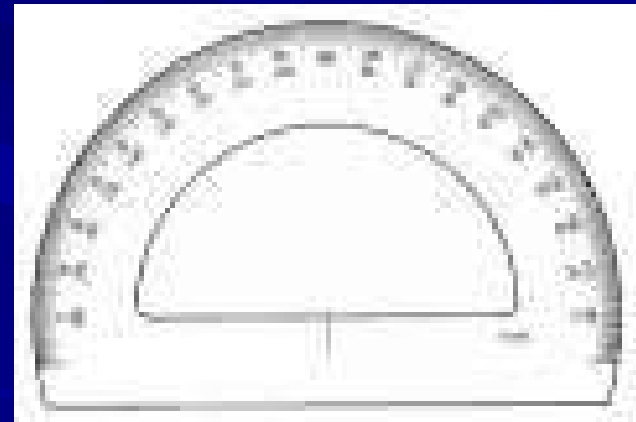
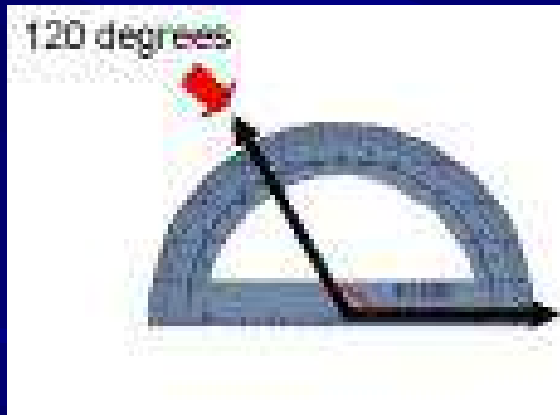


NOT POLYGON



PROTRACTOR

We use a PROTRACTOR to measure vertex/angles in degrees



4 TYPES OF ANGLES

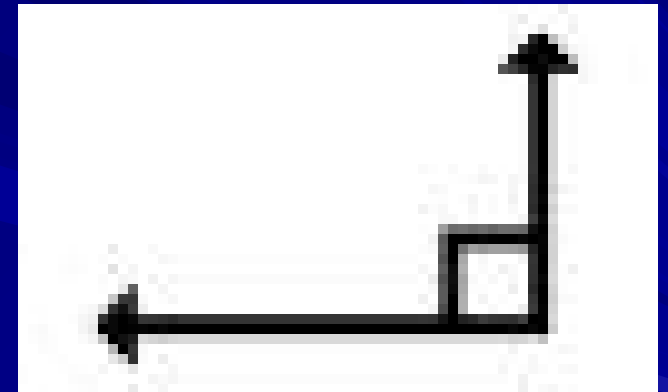
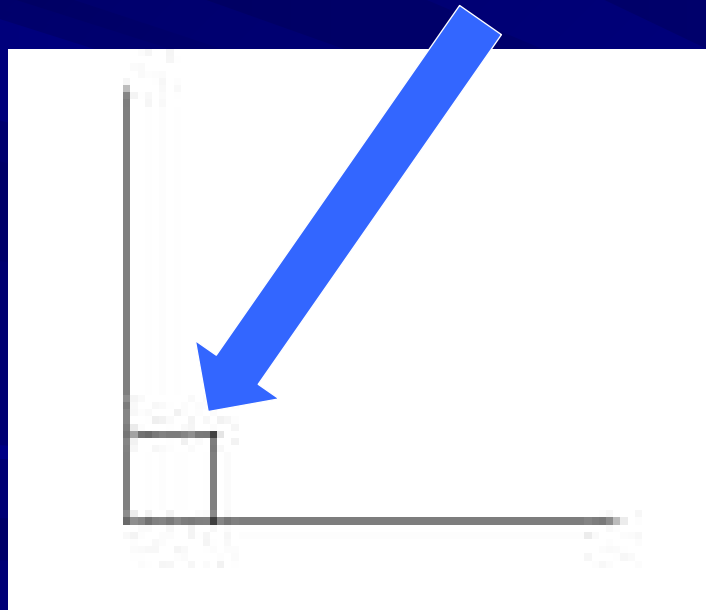
ACUTE ANGLES are less than 90°



4 TYPES OF ANGLES

RIGHT ANGLES measure exactly 90°

The
“square”
symbol
means
 90°



4 TYPES OF ANGLES

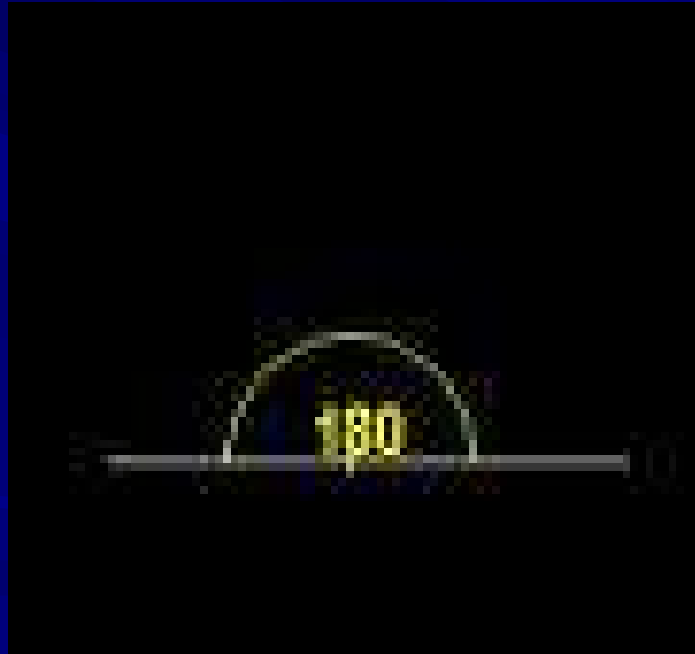
OBTUSE ANGLES are greater than 90° but less than 180°



4 TYPES OF ANGLES

STRAIGHT ANGLE is exactly 180°

– aka: a line



The End

Once you study all the fancy words/vocabulary, Geometry is very easy to understand...so STUDY!
You are Learning a new Language.