

9/7/11 & 9/8/11

What is Geometry?

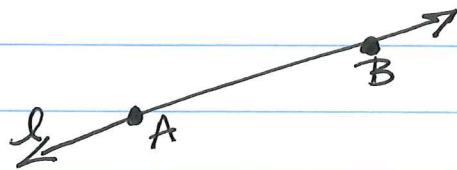
↓ earth (metric) measure

Euclid 300 B.C. wrote
Euclid's elements (13 books on geometry)

1-1 Points, Lines, and Planes

point = a location, has neither size nor shape • P (point P)

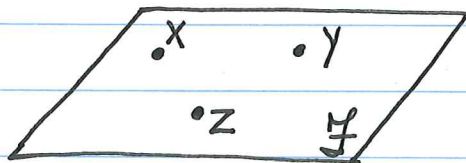
line = there is exactly one line through any two points, has no thickness or width, no endpoints



line AB, \overleftrightarrow{AB}
line BA, \overleftrightarrow{BA}
line l

collinear = two or more points on the same line.
↓
together ex: points A and B are collinear.

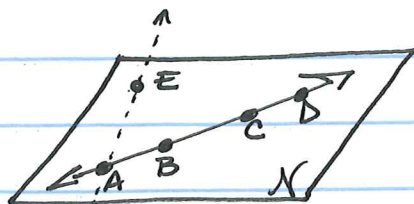
plane = there is exactly one plane through any three noncollinear points, a flat surface made up of points, has no depth & extends indefinitely in all directions.



plane XYZ, plane ZYX
plane XZY, plane YXZ
plane ZXY, plane YZX
plane Y

coplanar = three or more points that lie on the same plane, or two or more lines that lie on the same plane

ex:



Name a line containing point A.

\overleftrightarrow{AC} , \overleftrightarrow{AD} , \overleftrightarrow{AB} , \overleftrightarrow{DA} , \overleftrightarrow{BA} , \overleftrightarrow{CA} , \overleftrightarrow{AE} , \overleftrightarrow{EA}

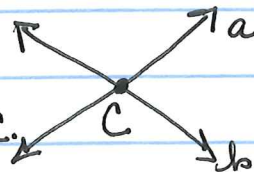
Name a plane containing point C.

plane N, plane CDE, plane CAE,
plane CBE, plane BCE, and so on.

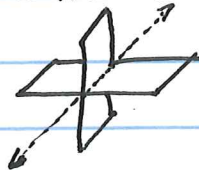
intersect = when two lines intersect we are talking about where they cross

- two lines intersect at a point.

ex: lines a and b intersect at point C.

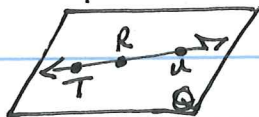


- two planes intersect at a line.



ex: draw and label the relationship:

\overleftrightarrow{TU} lies in plane Q and contains point R.



space = a boundless three-dimensional set of all points.

Space contains lines and planes.

See example 4 on page 8.