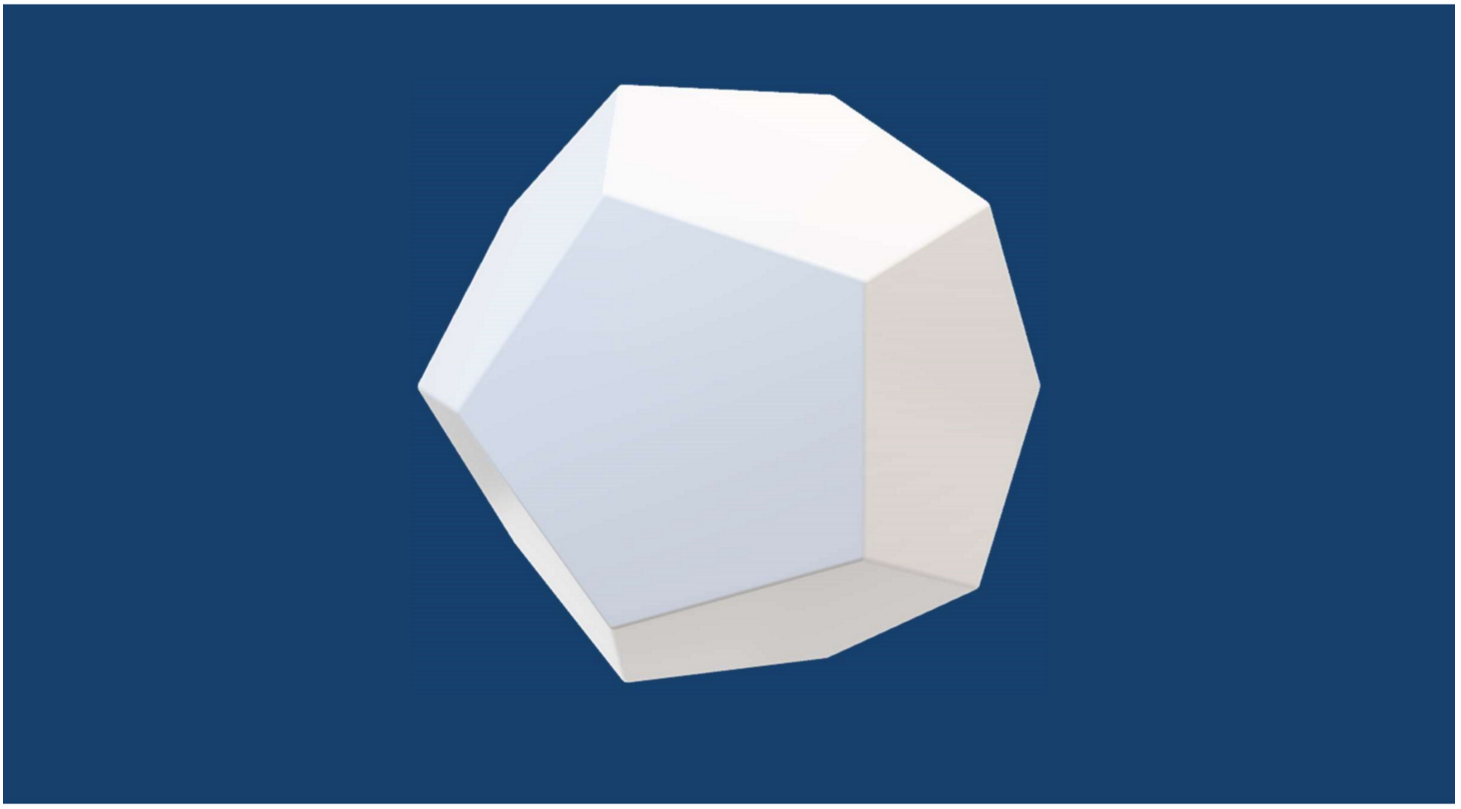
1.1 Notes

Thursday, August 10, 2023 9:59 PM

FORMAL GEOMETRY
1.1 POINTS, LINES, AND PLANES



UNDEFINED TERMS:

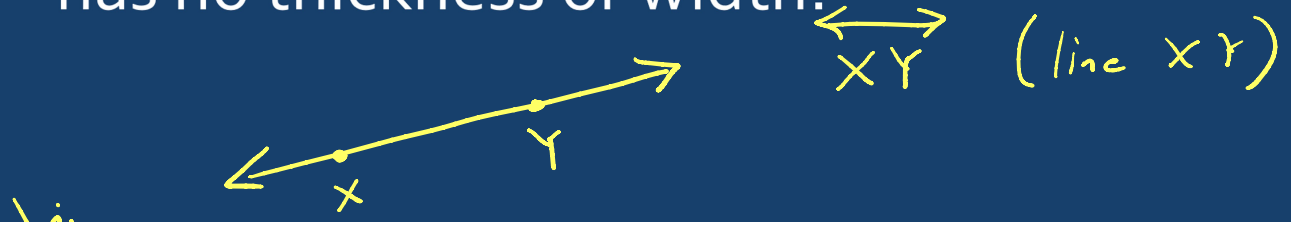
- Terms that can only be explained using examples and descriptions.
  - Ex. Points, Lines, and Planes

POINT:

- A *point* is a location. It has neither shape nor size. A point is named by a capital letter.

LINES :

- A *line* is named by 2 points with a double arrow above them, and a line has no thickness or width.

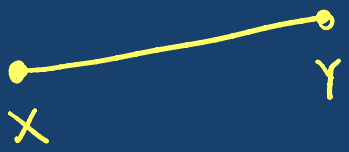


Postulate:

- There is exactly 1 line through any 2 points.

LINE SEGMENT :

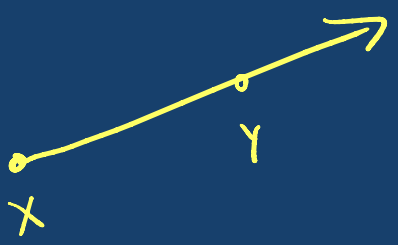
- A *line segment* is a part of a line, with two endpoints. It is named by 2 points with a bar above them.



$\overline{XY}$ (segment XY)

RAY:

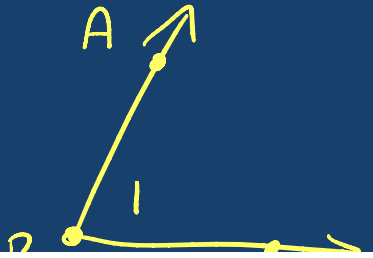
- A *ray* is a part of a line with one endpoint. It is named by 2 points with an arrow to the right above them (the end point must be named first.)



$\overrightarrow{XY}$ (Ray XY)

ANGLE:

- An angle is formed by two rays with a common endpoint.

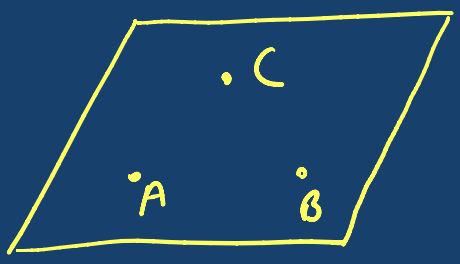


∠ABC , ∠CBA

∠B , ∠1

PLANES:

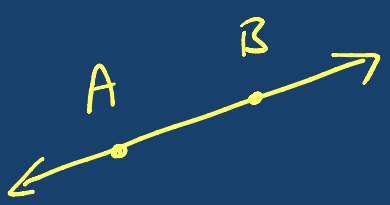
- A *plane* is a flat surface made up of points that extend infinitely in all directions. Name a plane by using 3 capital letters.



ABC (plane ABC)

COLLINEAR POINTS:

- If two points are collinear, then they lie on the same line.



A and B are collinear

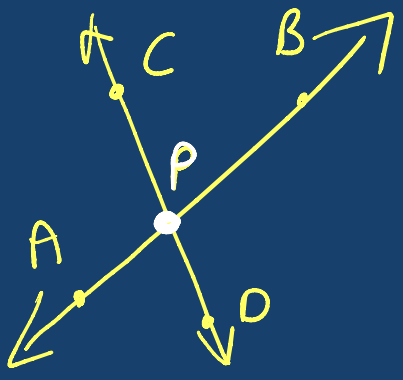
COPLANAR POINTS:

- If two points are coplanar, then they lie on the same plane.

C, D, and E are coplanar

INTERSECTING LINES:

- If two lines intersect each other, then they intersect at exactly one point.



$\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ intersect at P.

INTERSECTING PLANES:

- If two planes intersect each other, then their intersection is exactly one line.