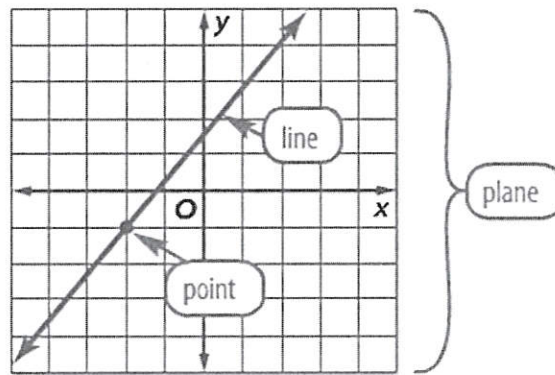


Points, Lines, and Planes classwork

KEY



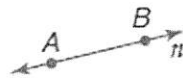
Undefined Terms in Geometry:

- **Point:** A particular location. Points have no size.

• P

- A point is named by a single letter.

- **Line:** Lines extend indefinitely and have neither thickness nor width.

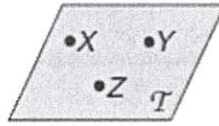


- Please name the line above in three ways.

- 1) AB
- 2) BA
- 3) line n

- **Collinear:** points on the same line

- **Plane:** A flat surface that extends indefinitely in all directions and having no thickness.

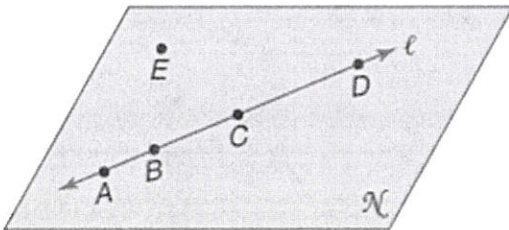


- Named in one of two ways.

- 1) plane T
- 2) XYZ

- **Coplanar** : points on the same plane

Ex #1: Use the figure to name each of the following.



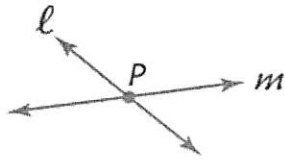
- A line containing point A line l, or \overleftrightarrow{CD}
- A plane containing point C plane N, or AEC
- A point collinear with points A and C. B, or D

Ex #2: Name the geometric shape modeled by each object.

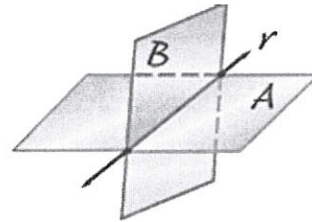
- a 10×12 patio plane
- a telephone wire line (segment)
- a star in the sky point

Intersections of Lines and Planes:

The **intersection** of two geometric figures is the set of all points they have in common.

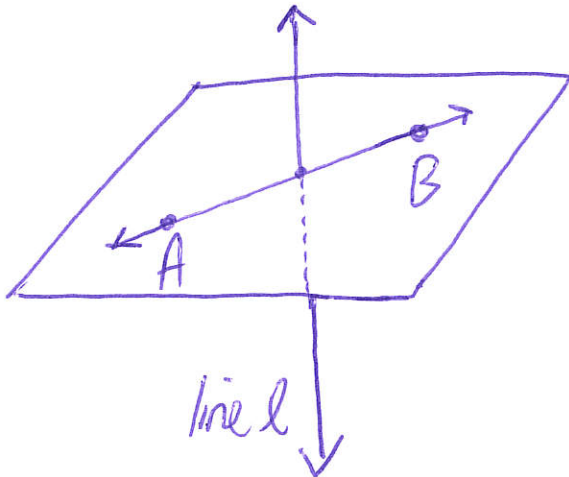


P represents the intersection of lines l and m .



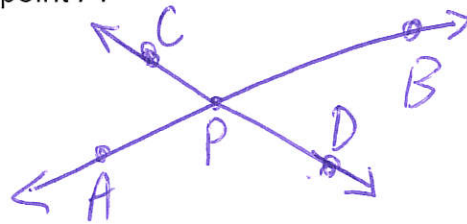
Line r represents the intersection of planes A and B .

Ex#3: Draw a figure of a plane with one line on the plane and a second line intersecting both plane and the first line.

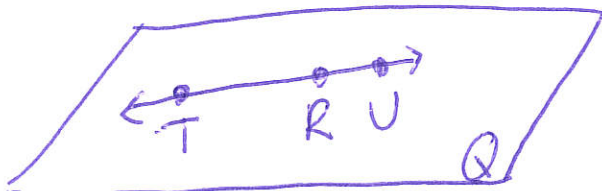


Ex #4: Draw and label a figure for each relationship.

a) Lines \overline{AB} and \overline{CD} intersect at point P .

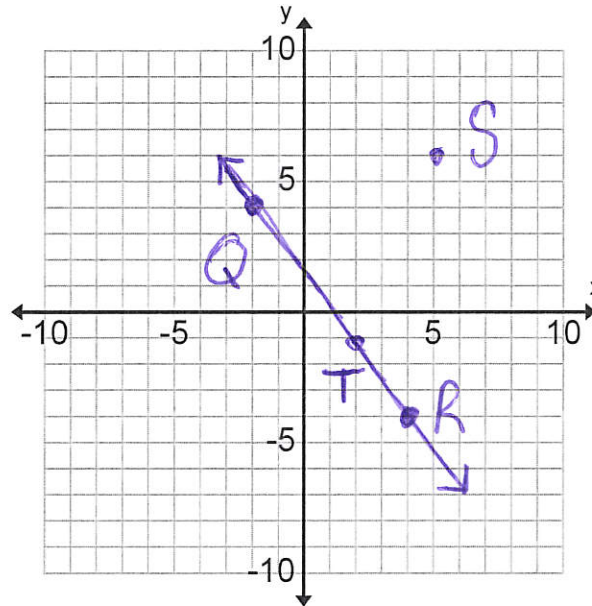


b) \overline{TU} lies in plane Q and contains point R .

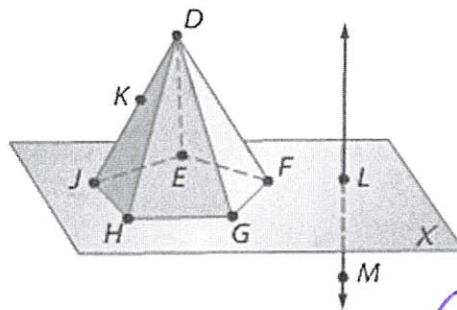


Ex#5: Draw a figure on the graph below.

- \overline{QR} on a coordinate plane contains $Q(-2, 4)$ and $R(4, -4)$. Add point T so that T is collinear with these points.
- Add any point S that is non-collinear with these points.



Ex#6: Refer to the figure below to answer the following questions.



- How many planes are pictured in the figure?
- Name three collinear points.
- Name the intersection of plane HDG and plane X.
- At what point does line LM and plane X intersect?
- Where do lines JH and DG intersect?

6 (5-faces of pyramid, 1-base of pyramid, same plane as X)

J, K, D

\overline{HG}

L

they don't!