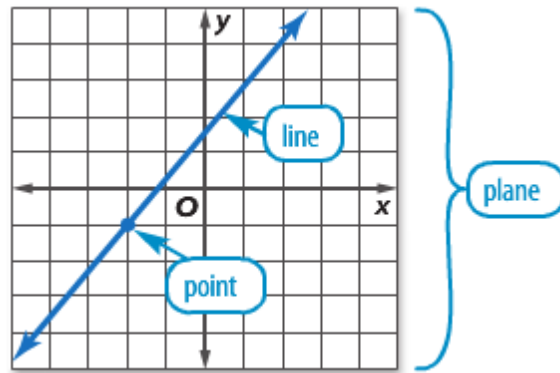
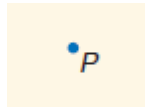


# Points, Lines, and Planes classwork



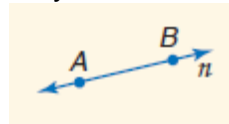
## Undefined Terms in Geometry:

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



- A point is named by \_\_\_\_\_.

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



- Please name the line above in three ways.

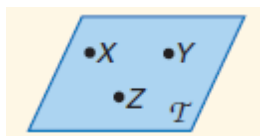
1) \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

- **Collinear**: points on the \_\_\_\_\_ line

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



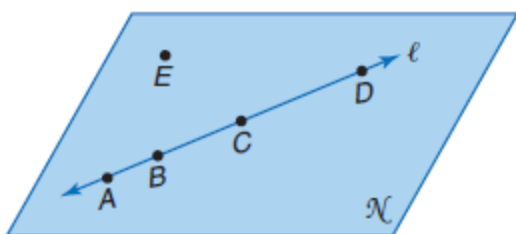
- Named in one of two ways.

1) \_\_\_\_\_

2) \_\_\_\_\_

- **Coplanar** : points on the \_\_\_\_\_

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



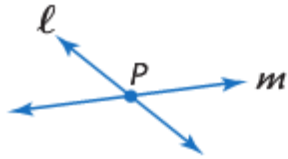
- A line containing point  $A$
- A plane containing point  $C$
- A point collinear with points  $A$  and  $C$ .

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

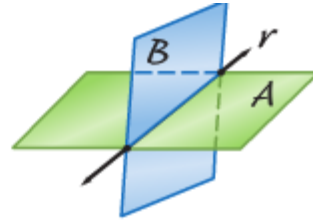
- a  $10 \times 12$  patio
- a telephone wire
- a star in the sky

## 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.

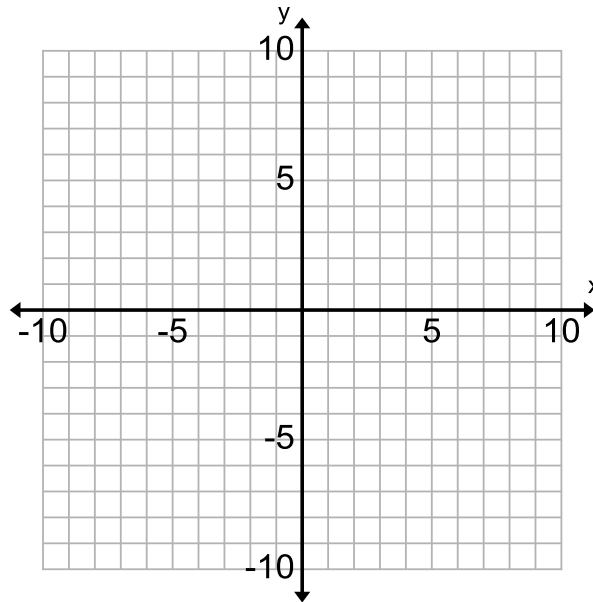
Ex #4: Draw and label a figure for each relationship.

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

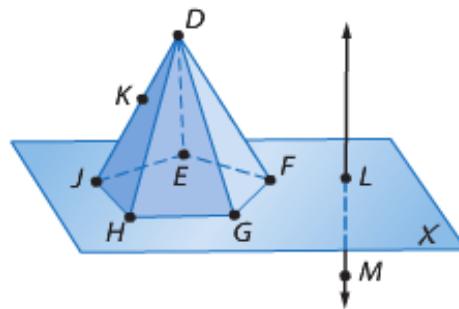
b)  $\overline{TU}$  lies in plane  $Q$  and contains point  $R$ .

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?