

**\$1.2 Points, Lines, and Planes**

Today we will learn how to identify points, lines, planes, and intersections of lines and planes.

**Definitions:**

Point-

Line-

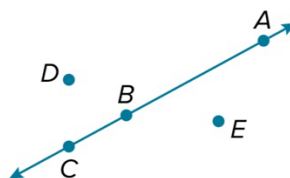
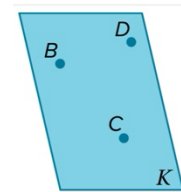
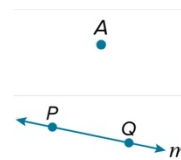
Plane-

Space-

Collinear-

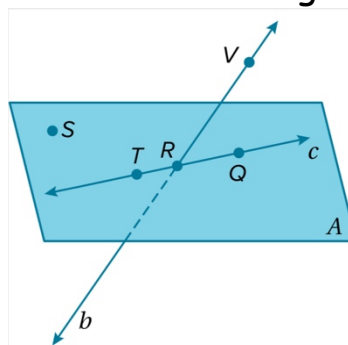
Coplanar-

Intersection-



**Example 1.2.1:** Use the figure to name each of the following.

A) A line containing point Q.



Using the choices provided, write the additional names for line  $c$  below.

- $\overleftrightarrow{TR}$     $\overleftrightarrow{RV}$     $\overleftrightarrow{TQ}$     $\overleftrightarrow{VT}$     $\overleftrightarrow{RQ}$
- $\overleftrightarrow{QR}$     $\overleftrightarrow{RT}$     $\overleftrightarrow{TS}$     $\overleftrightarrow{VR}$     $\overleftrightarrow{QT}$

B) A plane containing point S and point T

**Example 4.5.2:** Name the geometric terms modeled by the objects in the picture.

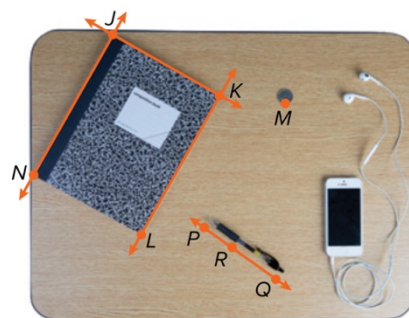
The notebook models \_\_\_\_\_.

The edges of the notebook model like JK and line \_\_\_\_\_.

The quarter models point \_\_\_\_\_ in space.

Points N, L, and K are \_\_\_\_\_.

Points P, Q, and R are \_\_\_\_\_.



Name \_\_\_\_\_ Date \_\_\_\_\_ Period: \_\_\_\_\_

**Example 1.2.3:** Draw and label a figure to represent the relationship.

Line JK and Line LM intersect at point P. Points L, K, and M are coplanar with another Point Q. Point Q is not collinear with line JK or line LM.

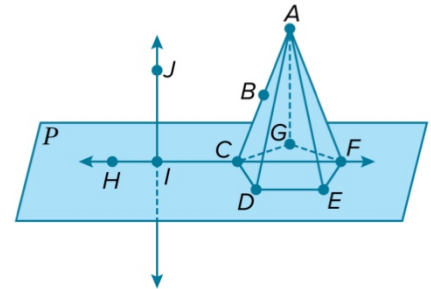
**Activity 1.2.4:** Refer to the figure.

A) How many planes are in the figure?

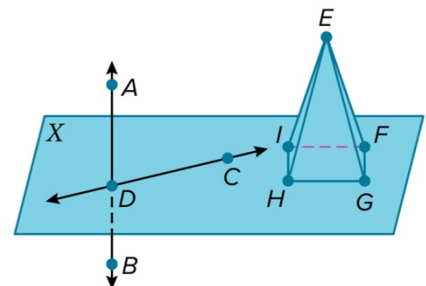
B) Name four collinear points.

C) Name the intersection of plane GAC and plane P.

D) At what point do  $\vec{JI}$  and  $\vec{DC}$  intersect? Explain



**Activity 1.2.5:** Refer to the figure. Name three points that are collinear.



**Theorem 1.2.6:** A line passes through at least two points, and a plane passes through at least three points.

**Theorem 1.2.7:** The intersection of two lines is at a point, and the intersection of two planes could be at a point, or a line, or a polygon.