A blue banner with a white border. On the left side, the number '101' is displayed in a large, white, sans-serif font. To the right of the number, the text 'Points, Lines, and Planes' is written in a smaller, white, sans-serif font.

101 Points, Lines, and Planes

Welcome to Geometry!

Today we will:

- * define, identify, and model points lines, and planes
- * identify intersecting lines and planes

TN State Standard G-CO Experiment with transformations in the plane.

A **point** is a location.

It has neither shape nor size.

Written as a
Capital letter

.y

A
•

w

is straight

A **line** is made up of points and has no thickness or width.

extends infinitely in both directions

There is exactly one line through any two points.



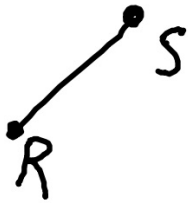
Notation:

\overleftrightarrow{PQ} or line m

\overleftrightarrow{QP}

line segment

a piece of a line with
two endpoints.

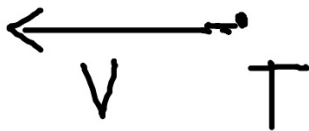


Notation

\overline{RS} or \overline{SR}

Ray

a piece of a line with one endpoint, continues in one direction

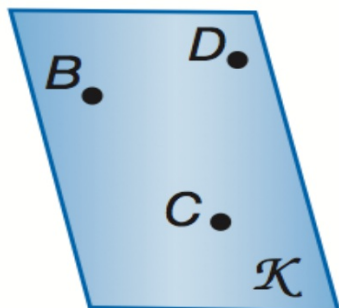


Notation: must name the endpoint first



A **plane** is a flat surface made up of points that extends infinitely in all directions.

There is exactly one plane through any three points not on the same line.



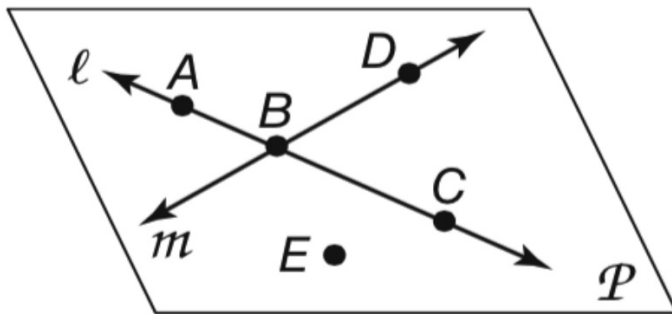
Notation: plane \mathcal{K}
plane BCD
plane CBD
plane DBC

Collinear points are points that lie on the same line.

Noncollinear points do not lie on the same line.

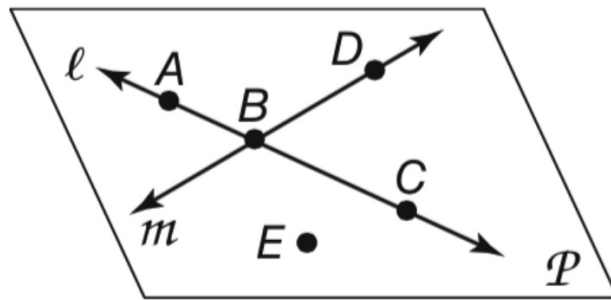
Coplanar points are points that lie in the same plane.

Noncoplanar points do not lie in the same plane.



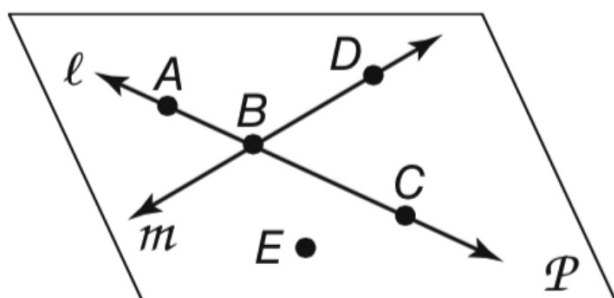
Refer to the figure.

3. Name a point not on \overleftrightarrow{AC} .



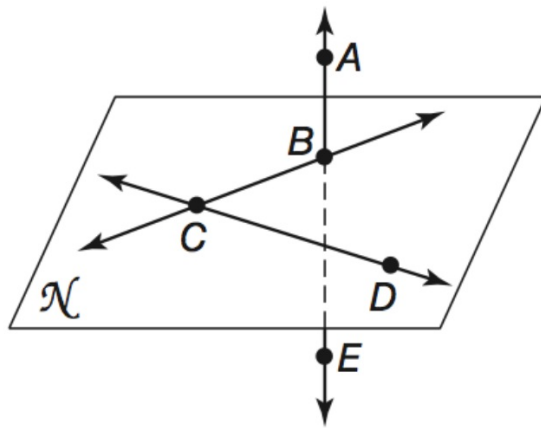
Refer to the figure.

2. What is another name for line m ?



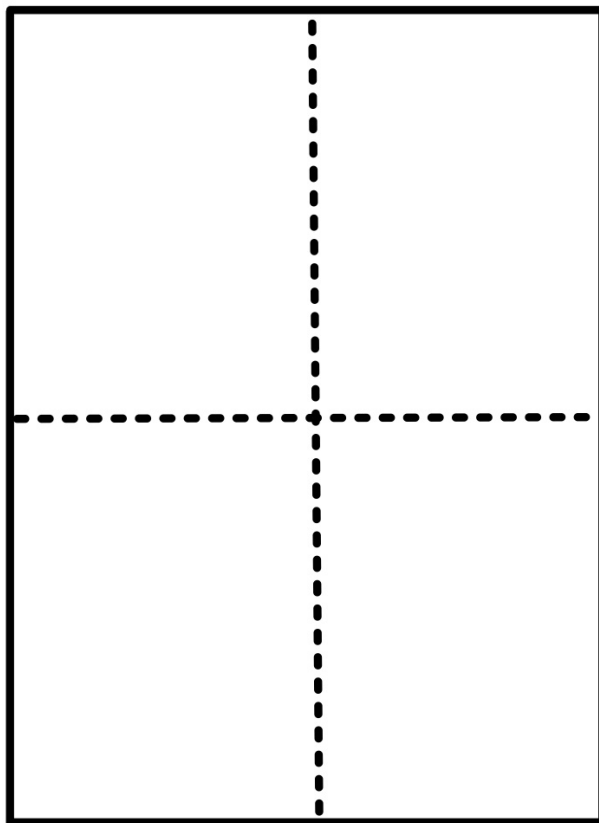
Refer to the figure.

3. Name a point not on \overleftrightarrow{AC} .



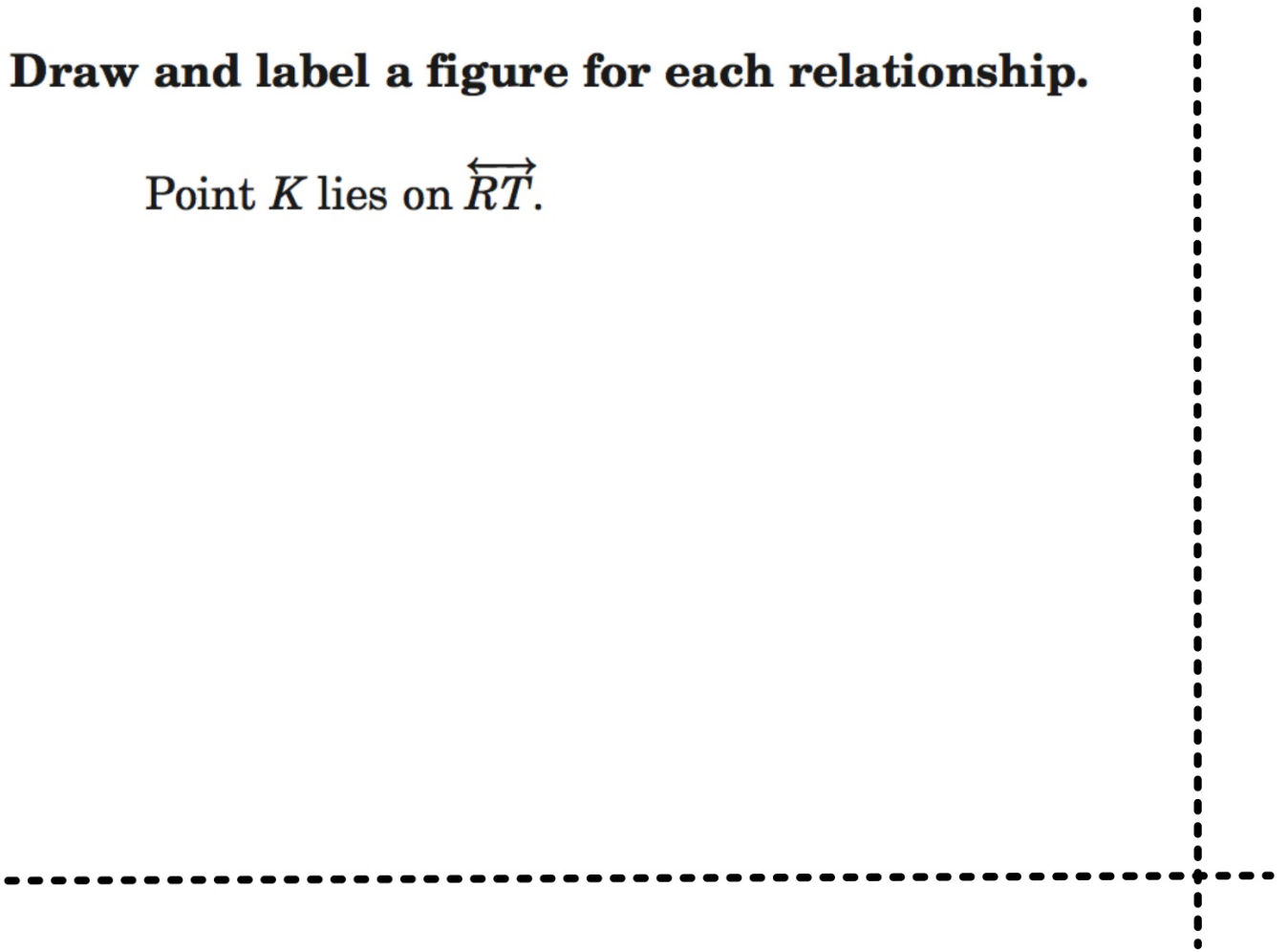
1. Name the intersection of plane \mathcal{N} and line \overleftrightarrow{AE} .

Set up your paper for 4 descriptions and drawings:



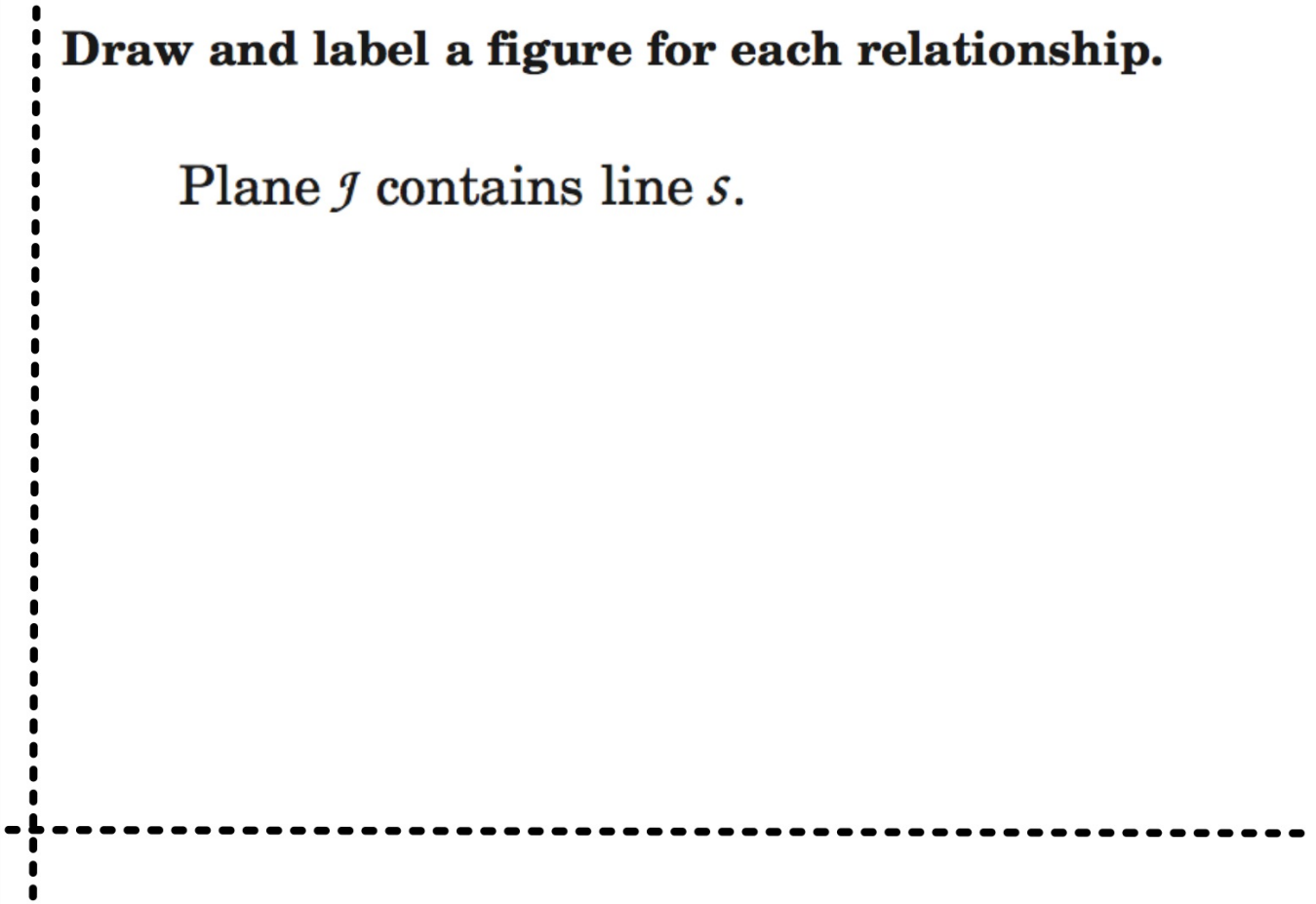
Draw and label a figure for each relationship.

Point K lies on \overleftrightarrow{RT} .



Draw and label a figure for each relationship.

Plane J contains line s .

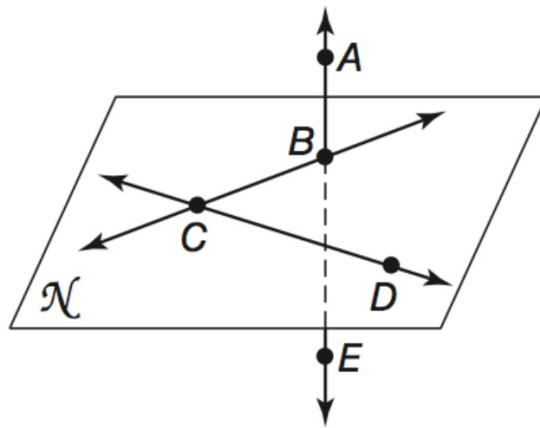


Draw and label a figure for each relationship.

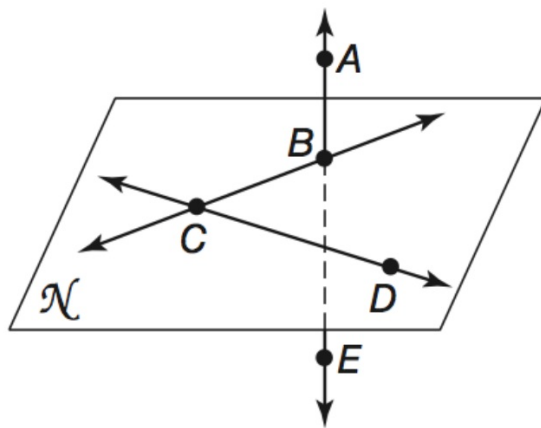
\overleftrightarrow{YP} lies in plane \mathcal{B} and contains point C , but does not contain point H .

Draw and label a figure for each relationship.

Lines q and f intersect at point Z
in plane \mathcal{U} .



2. Name the intersection of \overleftrightarrow{BC} and \overleftrightarrow{DC} .



3. Does \overleftrightarrow{DC} intersect \overleftrightarrow{AE} ? Explain.

STREETS The map shows some of the roads in downtown Little Rock. Lines are used to represent streets and points are used to represent intersections. Four of the street intersections are labeled. What street corresponds to line AB?

