A blue banner with the number 101 on the left and the text "Points, Lines, and Planes" on the right.

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.

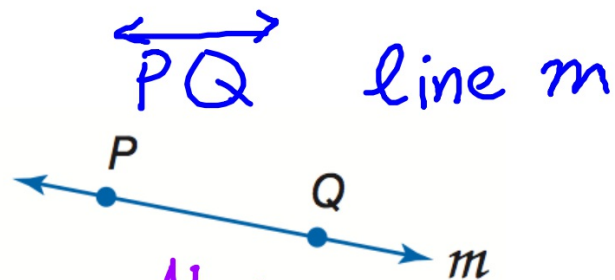
It has neither shape nor size.

A
•

Notation:
Uppercase / Capital
letter

A **line** ~~is made up of points and~~ has no thickness or width.
continues in both directions

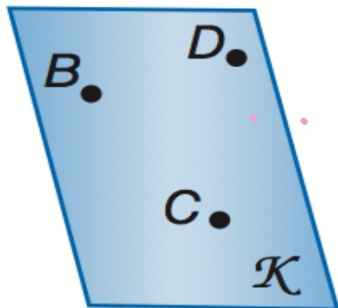
↳ There is exactly one line through any two points.
↳ on notepad



Notation
two points
or lowercase letter

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.



plane BCD

plane CBD

plane DCB

plane \mathcal{K}

} capital letter

Line segment

A piece of a line
with two endpoints

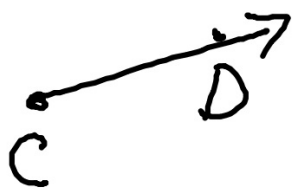


Notation

\overline{AB}

vs. \overleftrightarrow{AB}

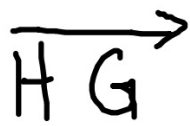
Ray A piece of a line
with one endpoint



\overrightarrow{CD}

goes forever in
one direction

Named w/ endpoint
first

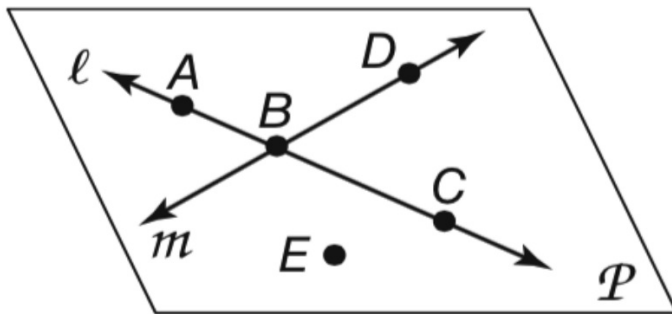


Collinear points are points that lie on the same line.

Noncollinear points do not lie on the same line.

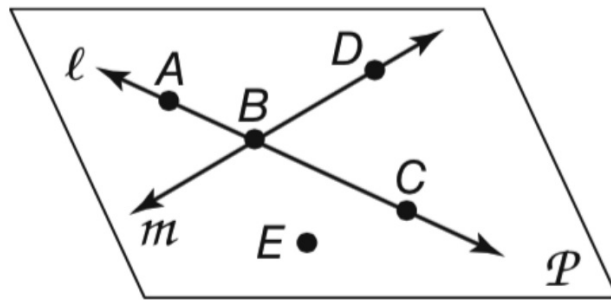
Coplanar points are points that lie in the same plane.

Noncoplanar points do not lie in the same plane.



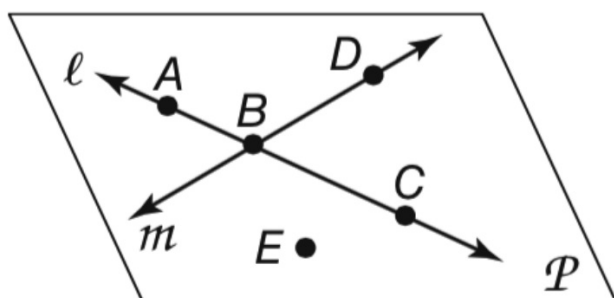
Refer to the figure.

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



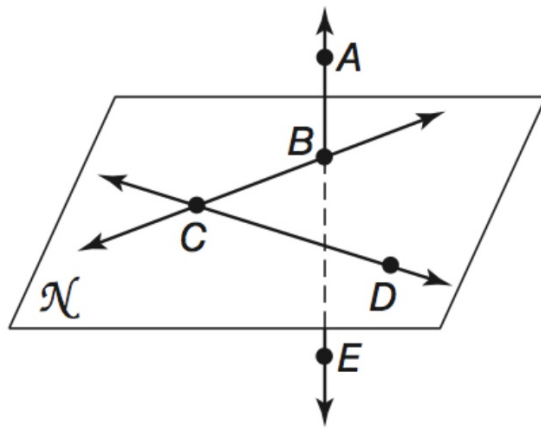
Refer to the figure.

2. What is another name for line m ?



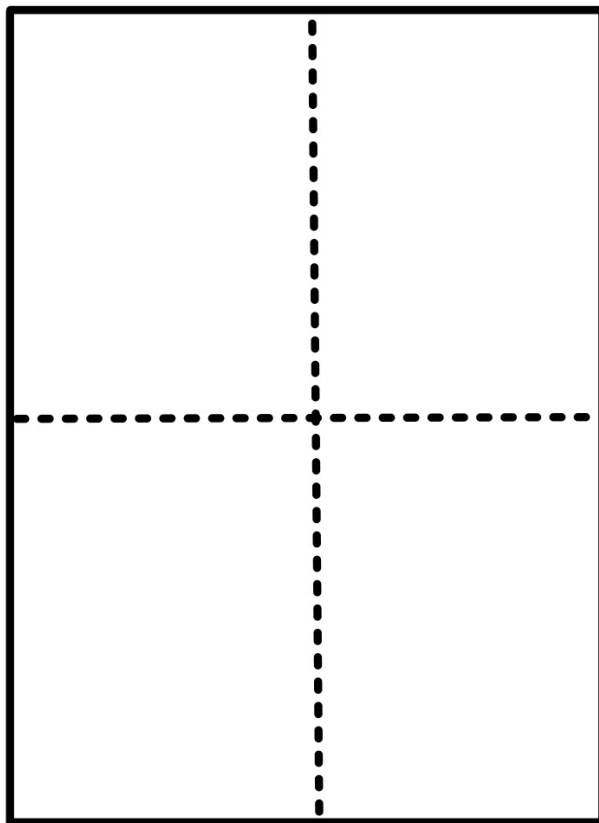
Refer to the figure.

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



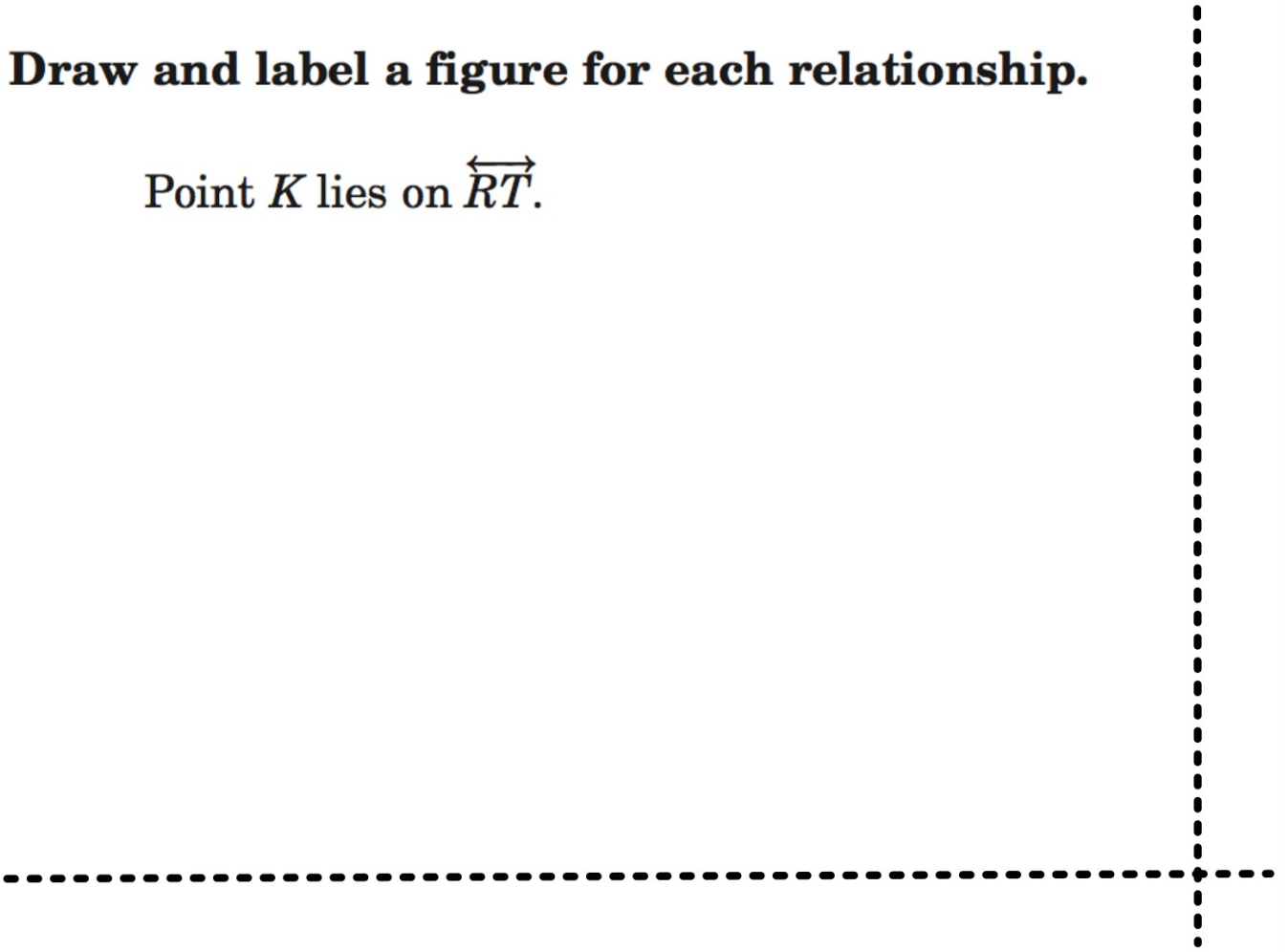
1. Name the intersection of plane \mathcal{N} and line \overleftrightarrow{AE} .

Set up your paper for 4 descriptions and drawings:



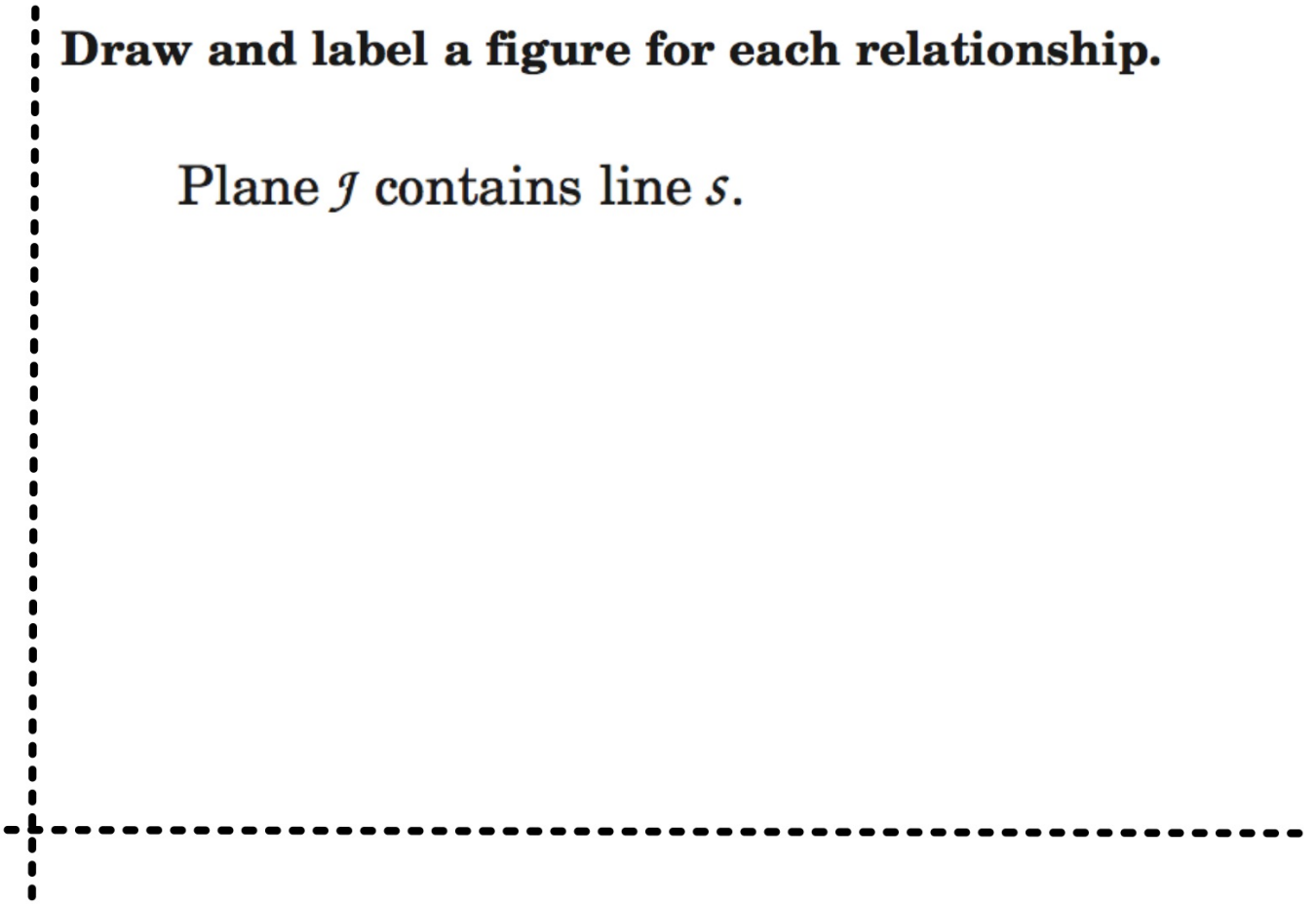
Draw and label a figure for each relationship.

Point K lies on \overleftrightarrow{RT} .



Draw and label a figure for each relationship.

Plane J contains line s .

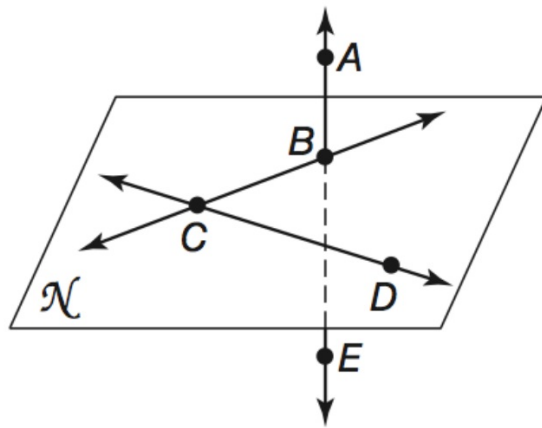


Draw and label a figure for each relationship.

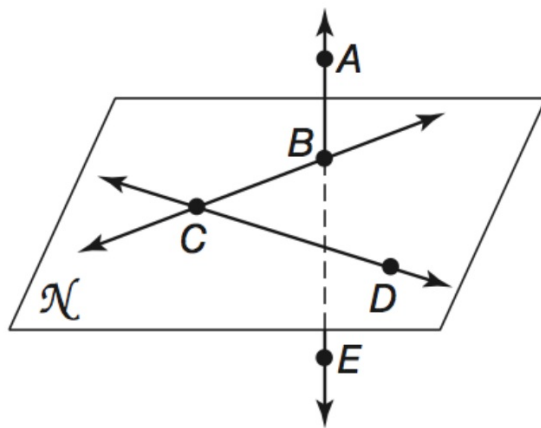
\overleftrightarrow{YP} lies in plane \mathcal{B} and contains point C , but does not contain point H .

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?

