

Chapter 1: Tools of Geometry

Section 1-1: Points, Lines and Planes

Objective:

- Identify and model points, lines and planes
- Identify intersecting lines and planes

Geometry Book

<https://connected.mcgraw-hill.com/connected/login.do>



- Point: a location
- Line: an infinite collection of points
- Plane: a flat surface composed of points that extends infinitely in any directions

Characteristics of Points

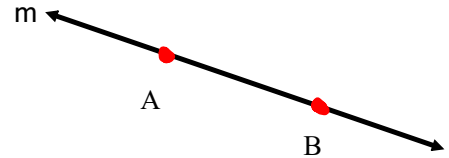
It has neither shape nor size

Named by a capital letter

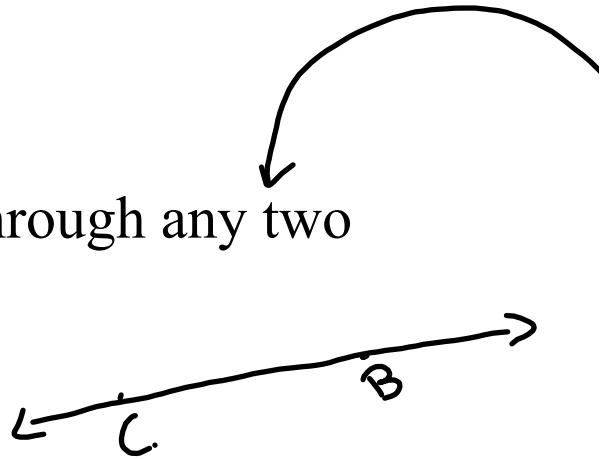


Characteristics of Lines

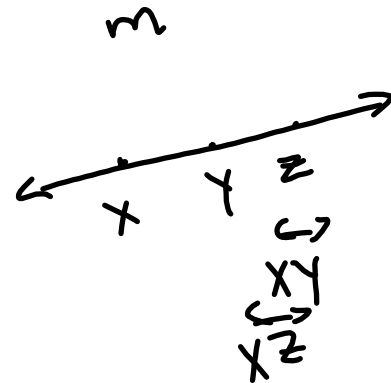
- It has no thickness or width
- It extends infinitely in both directions



****There is exactly one line through any two points****



Named By: two points on the line, or a lower case script letter

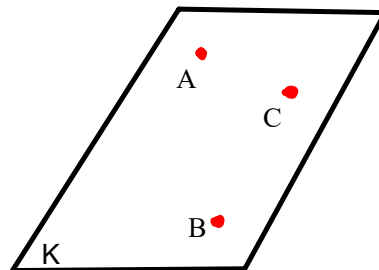


Characteristics of Planes

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

Named by: a single capital script letter or three points not on the same line

Plane ABC
Plane K



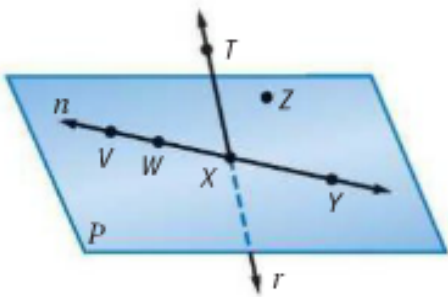
<http://www.nfl.com/videos/trueview-highlights/0ap3000000971683/See-how-David-Johnson-broke-the-plane-of-the-goal-line-in-360-True-View>



- Collinear: points on the same line
- Noncollinear: points that do not lie on the same line
- Coplanar: points on the same plane
- Noncoplanar: points not on the same plane



Use the figure to name the following:



Three collinear points:

V W X
W X Y

Three noncollinear points:

Three lines:

\overleftrightarrow{VW} \overleftrightarrow{TX} , n , \overleftrightarrow{TZ} \overleftrightarrow{YZ} \overleftrightarrow{TY}

Two planes

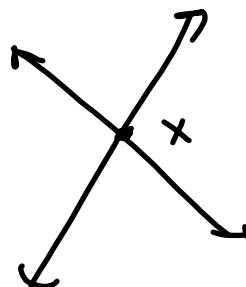
XYZ P VWX

Pg 8: 1-12 (skip 6 and 7)

Think about it...

two lines intersect at a...

point



two planes intersect at a...

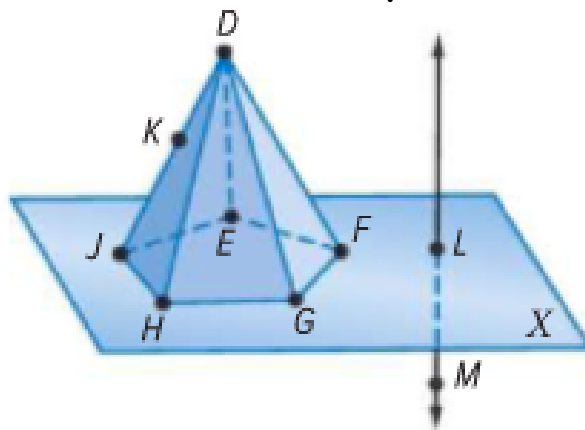
line

How many planes appear in the figure?

Name three collinear points

Name the intersection of plane HDG and plane X

Name the intersection of \overleftrightarrow{LM} and \overleftrightarrow{EF} ~~X~~ Plane X



pg 8-9

13-39 odd (Check Answers in Back of Book)

When two cars enter an intersection at the same times on opposing paths, one of the cars must adjust its speed or direction to avoid collision. Two airplanes, however, can cross paths while traveling in different directions without colliding. Why?

What is a point? Draw an example

What is a line? Draw an example

What is a plane? Draw an example