

Geometry

Points, Lines and Planes

Objectives


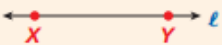
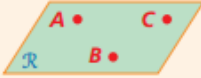
To understand basic terms of geometry.

To understand basic postulates of geometry.

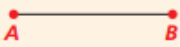
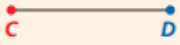

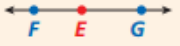
Points, Lines and Planes

Points, Lines and Planes are considered to be undefined.

Undefined Terms

TERM	NAME	DIAGRAM
A point names a location and has no size. It is represented by a dot.	A capital letter point P	
A line is a straight path that has no thickness and extends forever.	A lowercase letter or two points on the line line ℓ , \overleftrightarrow{XY} or \overleftrightarrow{YX}	
A plane is a flat surface that has no thickness and extends forever.	A script capital letter or three points not on a line plane \mathcal{R} or plane ABC	

Segments and Rays

DEFINITION	NAME	DIAGRAM
A segment , or line segment, is the part of a line consisting of two points and all points between them.	The two endpoints \overline{AB} or \overline{BA}	
An endpoint is a point at one end of a segment or the starting point of a ray.	A capital letter C and D	
A ray is a part of a line that starts at an endpoint and extends forever in one direction.	Its endpoint and any other point on the ray \overrightarrow{RS}	
Opposite rays are two rays that have a common endpoint and form a line.	The common endpoint and any other point on each ray \overrightarrow{EF} and \overrightarrow{EG}	




Collinear Points Points that lie on the same line

Coplanar Points and lines that lie in the same plane

Postulate or Axiom An accepted statement of fact

1.1 Points lines planes notes

Postulates Points, Lines, and Planes

- 1 Through any two points there is exactly one line. 
- 2 Through any three noncollinear points there is exactly one plane containing them. 
- 3 If two points lie in a plane, then the line containing those points lies in the plane. 

Postulates Intersection of Lines and Planes

- 4 If two lines intersect, then they intersect in exactly one point.
- 5 If two planes intersect, then they intersect in exactly one line.