

Points, Lines, & Planes

title

- Definitions
- Thm/Post
- Formulas
- Notes

Aug 25-8:28 AM

**On the first day of Geometry...
the Point was invented.**

Aug 19-6:20 PM

Point—indicates a position or location in space

- Has no dimension—no size or shape.
- Represented by a dot.
- Use a single capital letter to name a point.

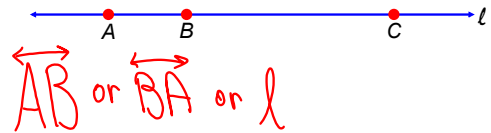
•A

point

On the second day of Geometry...
 another point was invented and which
 also connects to make a line.

Line—a figure that extends in one dimension and contains at least two points.

- Represented by a line with two arrowheads to indicate it extends without end.
- Through any two points, there is exactly one line.
- Use any two points on a line or a single lower case letter by the line to name a line.



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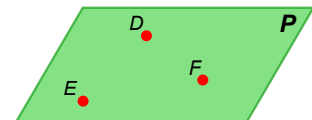
line

On the third day of Geometry...
 another point was invented and that
 created the plane.

Plane—a figure that extends in two dimensions and contains at least three points not on the same line.

- Represented by a shape that looks like a wall or floor, but it extends without end.
- Use any three points *not on the same line* or a single letter (without a dot) in the corner of the plane to name a plane.

plane EDF
 or
 plane P



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plane

Planes (*continued*)

- Through any three points not on the same line, there is exactly one plane.
- If two points lie in a plane, then the line containing them lies in the plane.

plane

Collinear points—points that lie on the same line

Coplanar points—points that lie in the same plane

collinear & coplanar

What is another name for line PQ ?
line n

What is another name for plane R ?
plane SPV , plane TVP

Name three collinear points.
 S, P, T

Name four coplanar points.
 V, S, P, T

examples

Ray—part of a line that consists of an endpoint and extends without end in one direction


- Use the endpoint and another point to name the ray; the endpoint must be listed first.

Opposite rays—two rays with a common endpoint that extend in opposite directions

ray

List all of the rays with endpoint J.

\overrightarrow{JE} \overrightarrow{JH}
 \overrightarrow{JG} \overrightarrow{JF}



Which of these rays are opposite rays?

\overrightarrow{JG} \overrightarrow{JH}
 \overrightarrow{JE} \overrightarrow{JF}

examples

Intersection—the set of points that two or more figures have in common

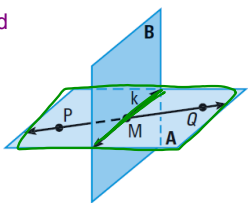
- If two lines intersect, then their intersection is exactly one point.
- If two planes intersect, then their intersection is a line.

intersections

Name the intersection of line k and line PQ . M

Name the intersection of plane A and plane B . $line\ k$

Name the intersection of line k and plane A . $line\ k$



examples

Conclusion

1. How can we name a line?
2. What is the intersection of two planes?
3. What does coplanar and collinear mean?
4. Questions??
5. Do you have the definitions written in the correct tab?

Aug 19-6:14 PM

Assignment
Worksheet 1.1

Aug 19-6:17 PM