

1.2 Points, Lines, and Planes

Undefined terms

1. A **point** has no dimension. It has a location but no shape or size.

Symbol: Point A (a capital letter)



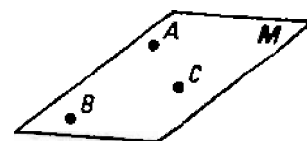
2. A **line** extends in one dimension. It is usually represented by a straight line with two arrow heads. A line is a set of points that extends in two directions.

Symbol(s): line l or \overleftrightarrow{AB} or \overleftrightarrow{BA} .



3. A **plane** extends in two dimensions. Though a plane is usually represented by a four-sided flat figure, it extends in all directions with no end.

Symbol(s): Plane M or plane ABC

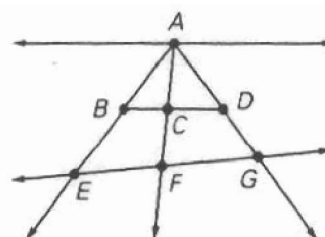


► **Collinear points** are points that lie on the same line.

► **Coplanar points** are points that lie on the same plane.

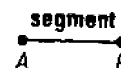
Name three points that are collinear.

Name three points that are coplanar.



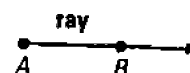
► A **segment** is part of a line that consists of two endpoints and all points between the endpoints.

Symbol: \overline{AB} (read segment AB) or \overline{BA} (read segment BA)



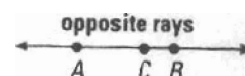
► A **ray** consists of an initial point A and all points on the line that lie on the same side of A as B. We think of a ray as a part of a line that extends in one direction.

Symbol: \overrightarrow{AB} (read ray AB)



► **Opposite rays** If C is between A and B, then \overrightarrow{CA} and \overrightarrow{CB} are *opposite rays*.

Any two opposite rays are collinear.



The **intersection** of figures is the set of points the figures have in common.

