* 1. Points, Lines, and Planes

*Point*- a location Example: H

\*\*To name a point or a set of points, just list the capital letters.

Example: K

 N M You would write: K,N,M

*Line*- made up of points and has no thickness or width. You must have 2 points to make a line. There is exactly one line through any two points. A line goes on forever in both directions.

Example:

 A B C

Notation: Line AC, Line CA, Line AB, Line BC, etc.

 Or

 AC, CA, AB, BC, etc.

Example:

 l

Notation: Line l ,or l

\*\*Points on the same line are said to be *collinear*. In the example above, A, B, and C are collinear.

*Plane*- a flat surface made up of points. You must have 3 points to make a plane.

\*\*Points that lie in the same plane, are said to be *coplanar*.

**A B**

 **C**

**D**

 **M**

Notation: Plane ACD, Plane ABC, Plane DBC, etc.

 Or ACD, ABC, DBC, etc. Or Plane M

*Segment*- unlike a line, a segment can be measured since it has two endpoints. You name a segment by its endpoints.

Example: A B

Notation: AB or BA

\*\*\* The length or measure of AB is written AB.

For example, if you wanted to say the length of CD is 5 cm, you would write CD=5 cm.

Ray: one endpoint and all collinear points on one side of the endpoint:

Example:

Notation:

Opposite Rays: Two rays that go in the opposite direction to form a line. They have a common endpoint.

Example:

Intersection - common points, shared points.

\*Two lines intersect at a point: Example:

\*Two planes intersect at a line. Example:

* 1. Postulates or Axioms

Postulate or Axiom- rule that is accepted without proof.

Ruler Postulate- basically states that we can make a number line (hence a ruler). Used to measure a segment not on a coordinate plane.

Example:

\*\*If two segments have the same length or measure, then they are said to be *congruent*.

Symbol for congruent: $≅$

If AB=10 in. and DC=10 in., then AB$≅$DC.

Example:

Segment Addition Postulate-

If R is between P and Q, then PR+RQ=PQ.

Picture:

Example:

Point S is between R and T on RT. Find RS and ST.

RS= 2x+10

ST=x – 4

RT=21