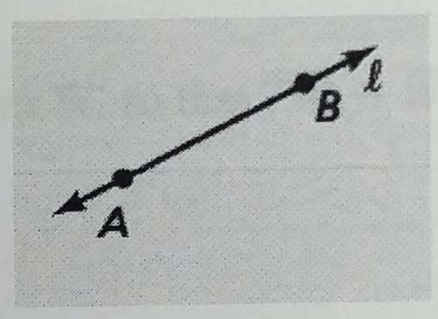
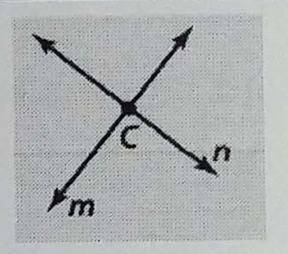
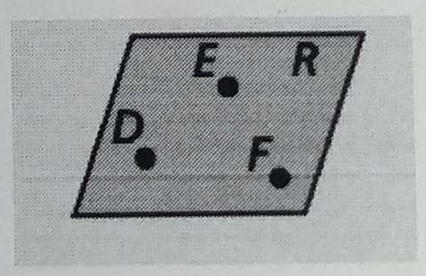
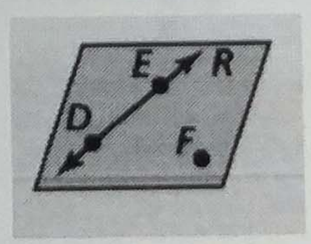
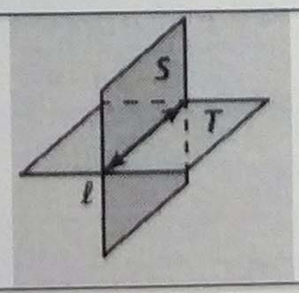
Name KEY Date _____ Period _____

Identifying Postulates

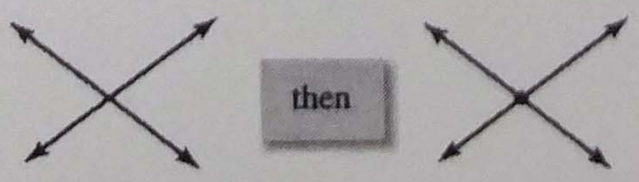
Lesson Objective

NAME POSTULATES AND USE DIAGRAMS TO NAME THEM; SKETCH GEOMETRIC FIGURES.

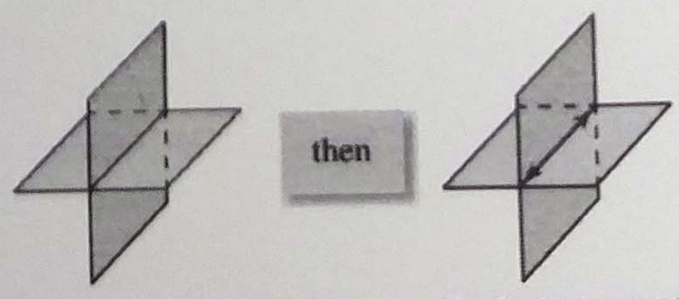
Postulates

Name	Postulate	Example Diagram	Diagram Explanation
Two Point Postulate	Through any 2 points, there exists exactly 1 line.		Through points *A* and *B*, there is exactly one line, *l*.
Line-Point Postulate	A line contains at least 2 points.		Line *l* contains at least two points.
Line Intersection Postulate	If two lines intersect, then their intersection is exactly 1 POINT.		The intersection of line *m* and line *n* is point *C*.
Three Point Postulate **a.k.a. the "Tripod Postulate"**	Through any 3 NONCOLLINEAR points there exists exactly 1 plane.		Through points *D*, *E*, and *F*, there is exactly one plane, plane *R*.
Plane-Point Postulate	A plane contains at least 3 NONCOLLINEAR points.		Plane *R* contains at least three noncollinear points.
Plane-Line Postulate	If 2 points lie in a plane, then the line containing THEM LIES IN THE PLANE.		Points *D* and *E* lie in plane *R*, so $\overleftrightarrow{DE}$ lies in plane *R*.
Plane Intersection Postulate	If two planes intersect, then their intersection is a LINE.		The intersection of plane *S* and plane *T* is line *l*.

Example: State the postulate illustrated by the diagram.

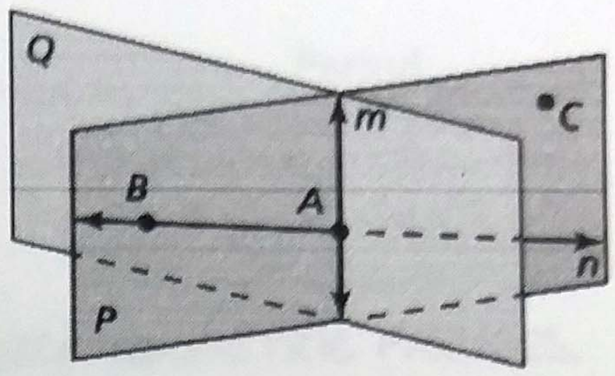
1. If  then

LINE INTERSECTION POSTULATE

2. If  then

PLANE INTERSECTION POSTULATE

Example: Use the diagram to write examples of the following postulates:



3. Plane-Point Postulate
   PLANE P CONTAINS 3 NONCOLLINEAR POINTS: B, A, C

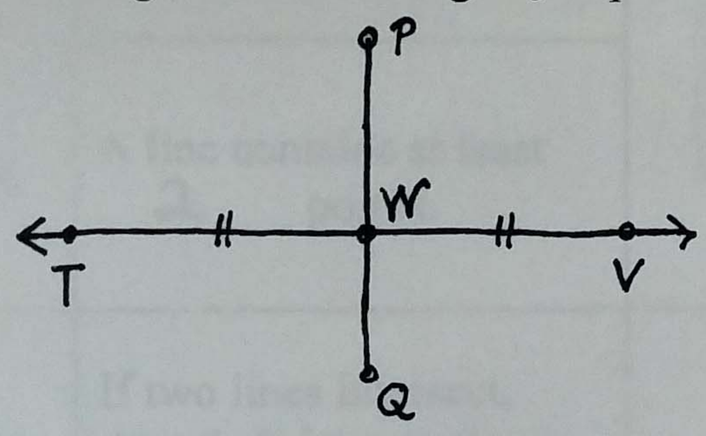
4. Plane-Line Postulate
   B, A ARE IN PLANE P, SO WE CAN DRAW $\overleftrightarrow{BA}$

5. Three Point Postulate
   A, B, C ARE NONCOLLINEAR, SO WE CAN MAKE PLANE P

<u>Sketching Diagrams</u>

Example:

6. Sketch a diagram showing $\overleftrightarrow{TV}$ intersecting $\overline{PQ}$ at point W, so that $\overline{TW} \cong \overline{WV}$.



~~7.~~ Sketch a diagram showing ~~$\overleftrightarrow{VX}$~~ $\overleftrightarrow{YX}$ intersecting $\overleftrightarrow{UW}$ at V so that ~~$\overleftrightarrow{VX}$~~ $\overleftrightarrow{YX}$ is perpendicular to $\overleftrightarrow{UW}$ and U, V, and W are collinear.

SKIP