TOPIC: **2.4 Use Postulates and Diagrams**	NAME: Mrs. Hutschenreuter DATE:

ESSENTIAL QUESTION: **How can you identify postulates illustrated by a diagram?**

QUESTIONS:

What does mean for lines or planes to be perpendicular?

VOCABULARY:

perpendicular — Perpendicular lines/planes form a right angle; symbol is ⊥. Slopes are opposite reciprocals

postulate — A rule accepted without proof

① Use the postulates to determine if a statement is true or false

② Draw a diagram to illustrate the postulate

Postulate 5:

Through any two points there exists exactly one line.

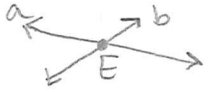
Given pt. A and pt. B there exists only 1 line.

Postulate 6:

A line contains at least 2 points.

Postulate 7:

If 2 lines intersect, then their intersection is exactly one point.

Given line a and b 

, their intersection is pt. E

Postulate 8:

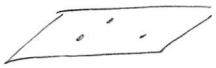
Through any 3 noncollinear points there exists exactly one plane.

Given 

there is 1 plane 

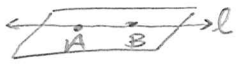
Postulate 9:

A plane contains at least three noncollinear points.



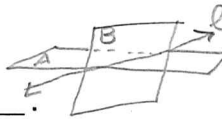
Postulate 10:

If 2 points lie in a plane, then the line containing them lies in the plane. If 

then 

Postulate 11:

If 2 planes intersect, then their intersection is a line.



SUMMARY:

Look for collinear points
Look for ⊥ markings
Look for ≅ ∠s and segments

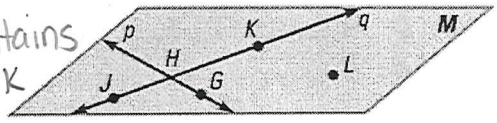
* Specific to the problem/diagram

QUESTIONS:

Give an example of the postulate using the diagram

Examples:

A1. Use the diagram to give an example of each postulate.



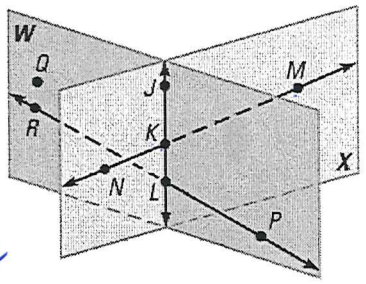
a. Postulate 6 Line q contains points J, H, K

b. Postulate 7 Line p and line q intersect @ point H

c. Postulate 8 points K, G, L are noncollinear and line in plane M

Decide if the statement is true or false using your knowledge of the postulates

A2. Use the diagram to determine whether the statements are *true* or *false*.



a. Planes W and X intersect at $\overleftrightarrow{KL}$. True

b. Points Q, J and M are collinear. False

c. Points K, L, M and R are coplanar. False

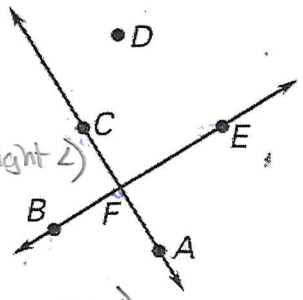
d. $\overleftrightarrow{MN}$ and $\overleftrightarrow{RP}$ intersect. False

e. $\overleftrightarrow{RP} \perp$ plane W. False

f. $\overleftrightarrow{JK}$ lies in plane X. True

g. $\angle PLK$ is a right angle. False

A3. Can the statements be assumed as true based on the given diagram?



a. B, C and D are collinear. NO

b. $\angle CFE$ and $\angle BFC$ are supplements. True (form straight ∠)

c. $\overleftrightarrow{AC} \perp \overleftrightarrow{BE}$ NO

d. $\angle CFE$ and $\angle AFE$ are linear pairs. True (form straight ∠ and share a side)

e. $\angle CFE \cong \angle AFE$ NO

f. $m\angle CFA = 180°$ True (straight ∠)

g. $\angle CFE \cong \angle AFB$ True (vertical ∠)

h. $\overleftrightarrow{AC}$ and $\overleftrightarrow{BE}$ intersect at point F. True (postulate 7)