SC Honors Geometry - Nappier
2.3 – Postulates & Diagrams

Speak **L**ike **A** **M**athematician:

postulate (axiom):

line perpendicular to a plane:

Point, Line, and Plane Postulates

Through any two points, there exists exactly one _____.

A line contains at least _____ points.

If two lines intersect, then their intersection is exactly one _____.

Through any three noncollinear points, there exists exactly one _____.

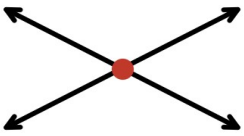
A plane contains at least _____ noncollinear points.

If two points lie in a plane, then the _____ containing them lies in the plane.

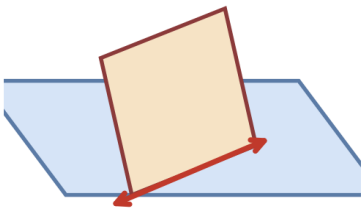
If two planes intersect, then their intersection is a _____.

Example 1 – Name That Postulate

State the postulate illustrated by each diagram.

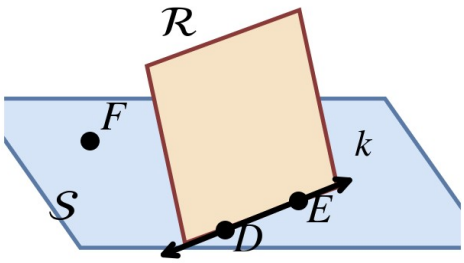


a)



b)

Example 2 – Use the Diagram



a) Which postulate allows you to say that the intersection of plane R and plane S is a line?

b) Use the diagram to write an example of the Two Point Postulate, the Line-Point Postulate, and the Line Intersection Postulate.

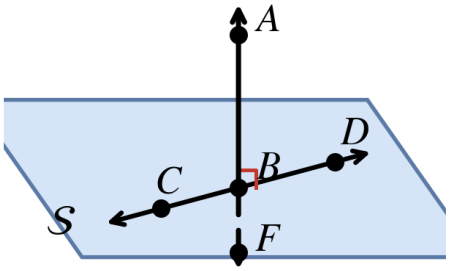
Example 3 – Sketch a Diagram

a) Sketch a diagram showing line JK intersecting segment MN at point X, so that JX ≅ XK.

b) Sketch segment AB in plane M, with segment AB bisected by point P, and point Q not on segment AB.

Example 4 – Valid or Not?

Determine whether each statement is valid based on the diagram.



a) Points A, B, and F are collinear.

b) Points E, B, and D are collinear.

c) Line AF ⊥ plane S.

d) Line CD ⊥ plane T.

e) Line AF intersects line CD at point B.