

PIERCING POINTS AND THE INTERSECTIONS OF PLANES

JOB CHAPTER 8

NORTH PACIFIC DESIGN
 2727 HOLLYCROFT ST #410
 Gig Harbor, WA 98335
 (253) 858-8204 Fax (253) 858-3188

SHEET NO. 1 OF _____

CALCULATED BY _____ DATE _____

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PIERCING POINT OF A LINE AND A PLANE

* IF A LINE INTERSECTS A PLANE AT A SINGLE POINT, THE POINT OF INTERSECTION IS CALLED A PIERCING POINT.

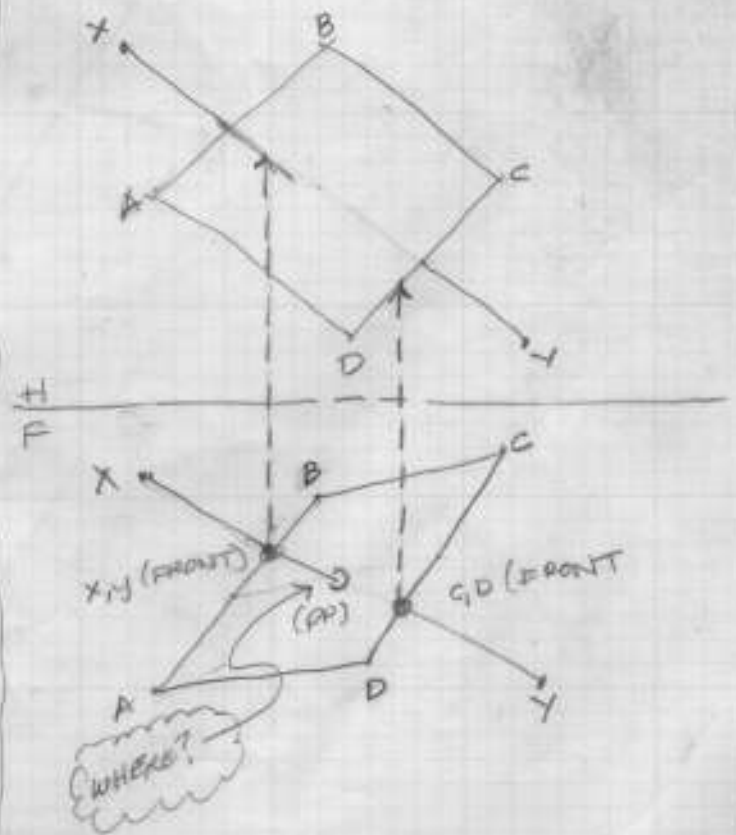
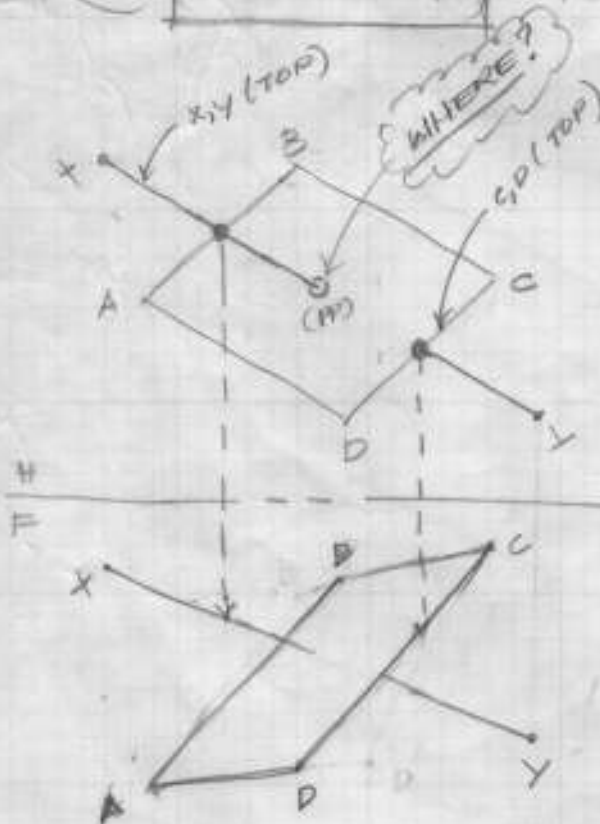


AUXILIARY VIEW METHOD "EV METHOD"

* IT REQUIRES THAT THE PLANE APPEAR AS AN EV.

1) DETERMINE WHICH IS ON TOP / BOTTOM. } FRONT / BACK
 (HORIZONTAL) } (FRONTAL)

VISIBILITY



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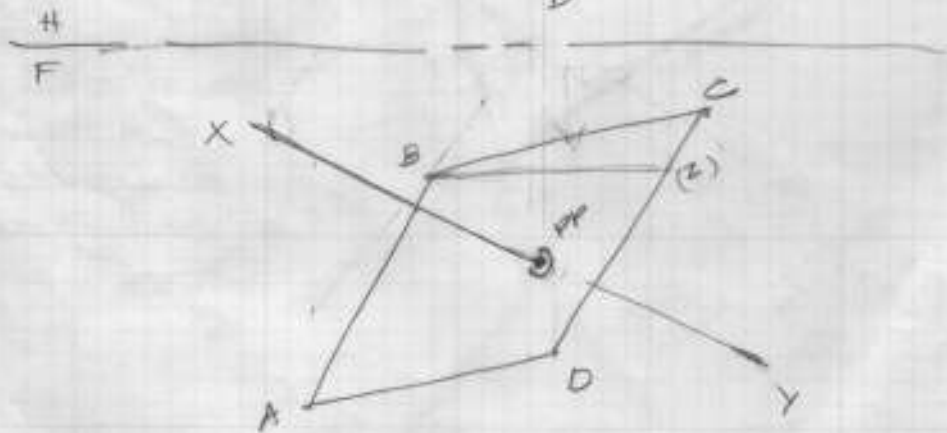
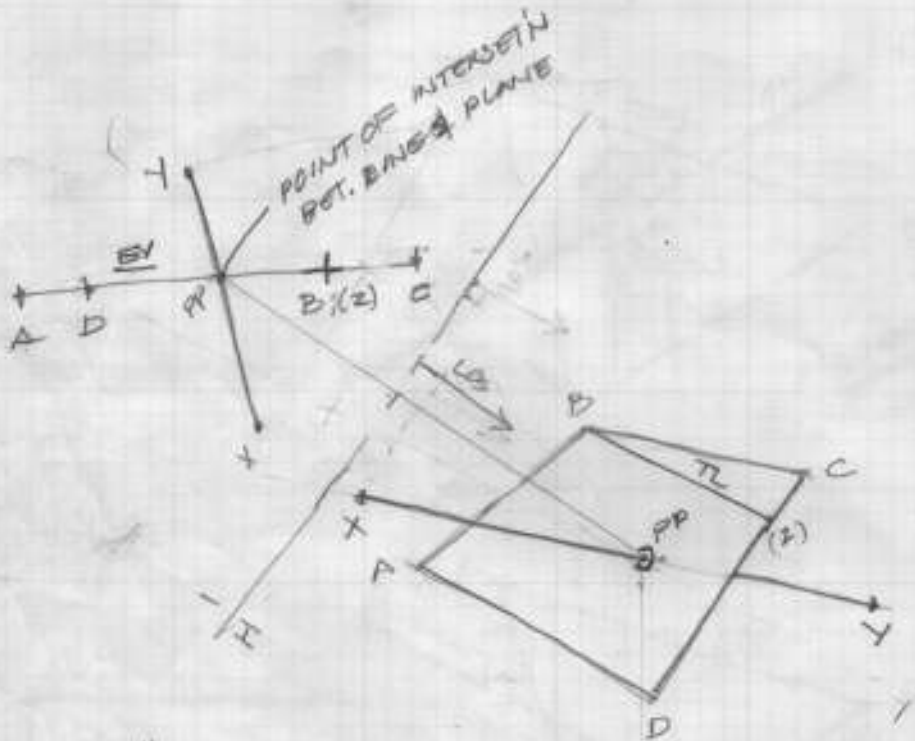
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WHERE IS THE PP PIERCING POINT LOCATED?

- PROCESS:
- 1) FIND TL LINE.
 - 2) FIND FV
 - 3) FIND EV ; POINT OF INTERSECTION.



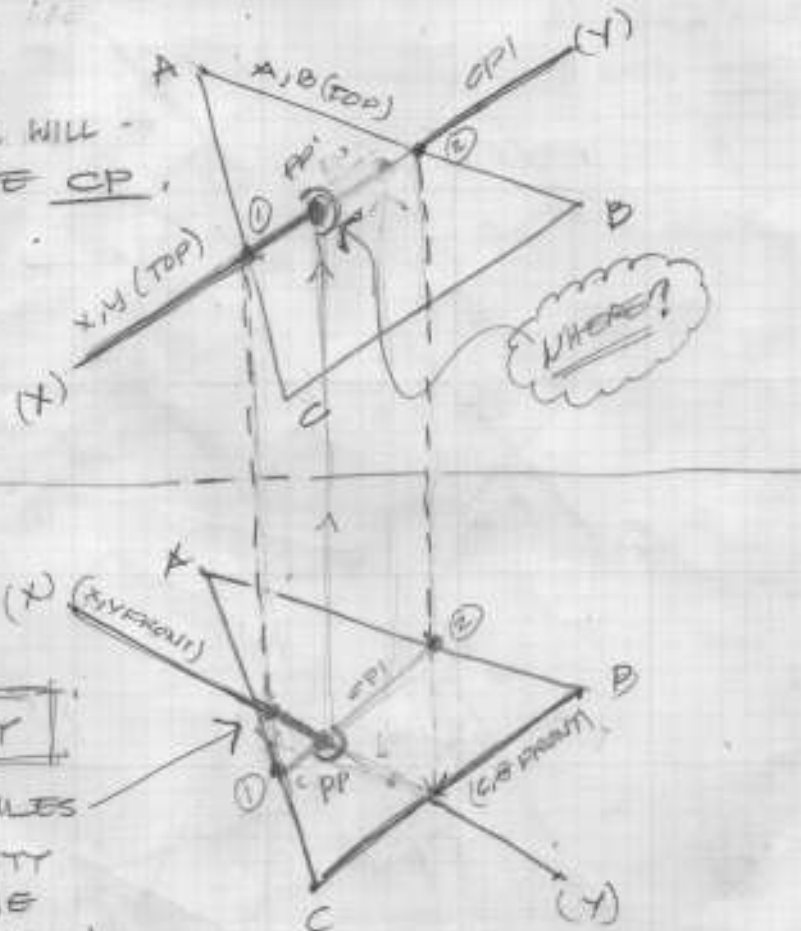
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CUTTING PLANE METHOD "CP METHOD"

* PP CAN BE FOUND ONLY USING (2) VIEWS AND A CUTTING PLANE.

(2) PROJECT'S POINTS OF INTERSECTION WILL GET YOU THE CP.



VISIBILITY

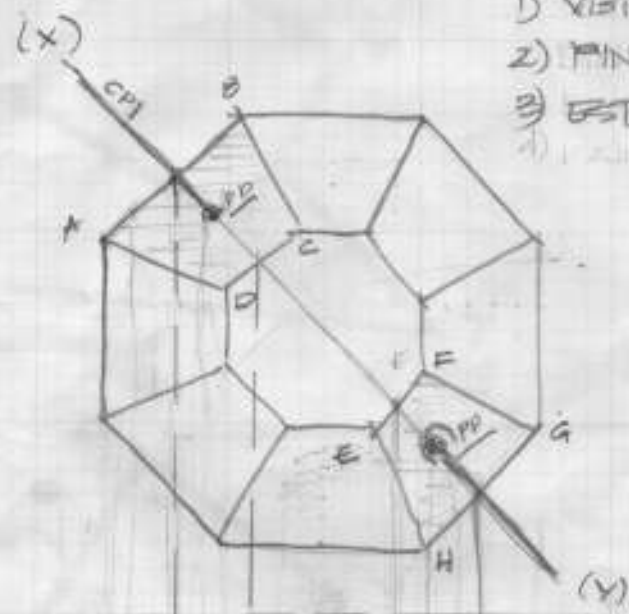
USE THE RULES FOR VISIBILITY TO DETERMINE FRONT V. BACK & TOP V. BOTTOM.

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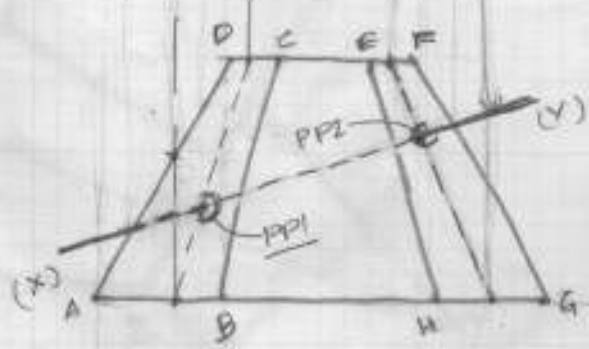
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PIERCING POINTS OF A LINE PASSING THRU A
 3-DIMENSIONAL OBJECT.

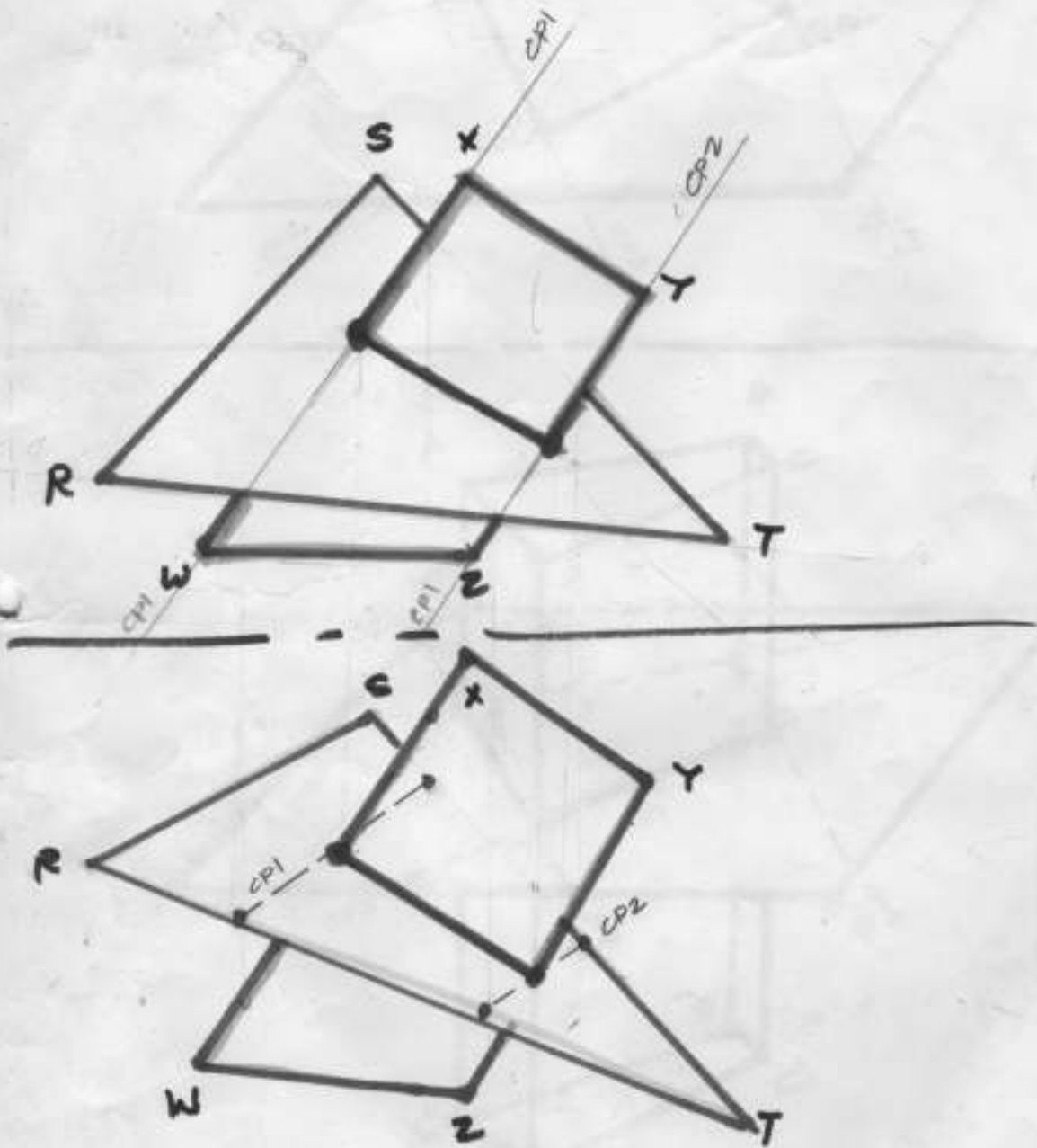
- PROCESS:
- 1) VISIBILITY
 - 2) FIND/PROJECT CP
 - 3) EST. PP
 - 4) ...



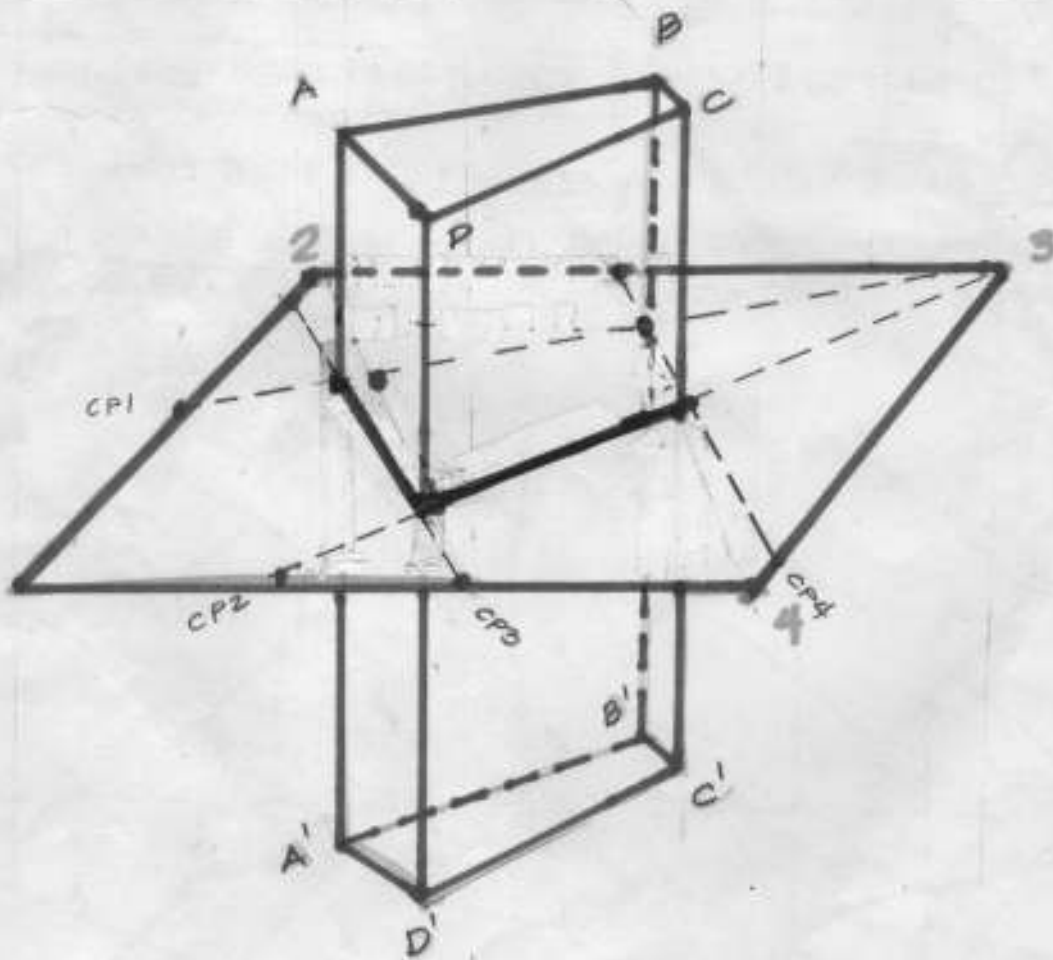
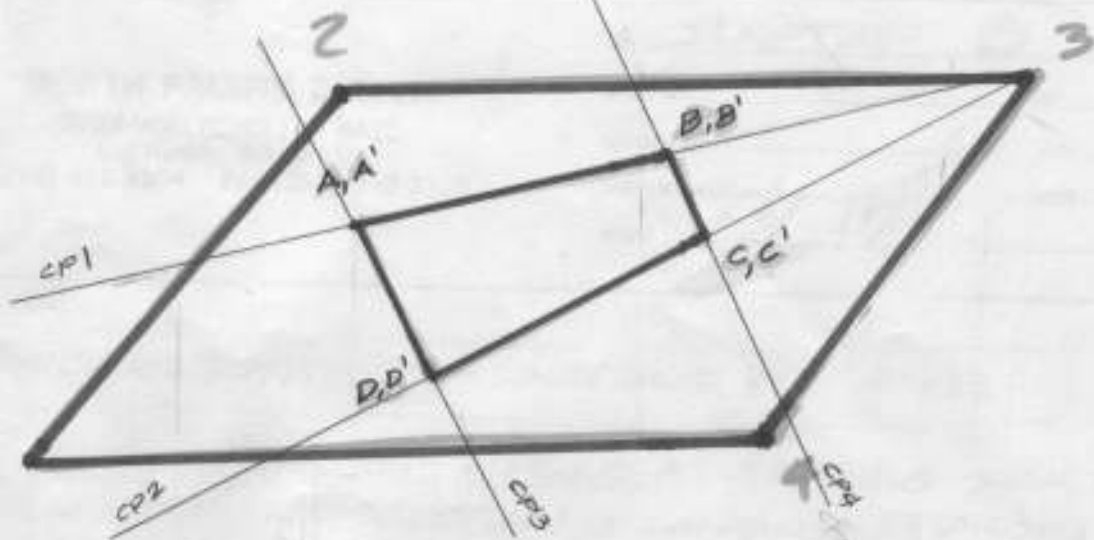
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INTERSECTION OF TWO PLANES



INTERSECTION OF A 3D-OBJECT & A PLANE

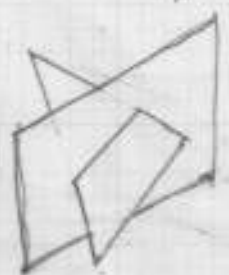


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THE INTERSECTION OF TWO PLANES

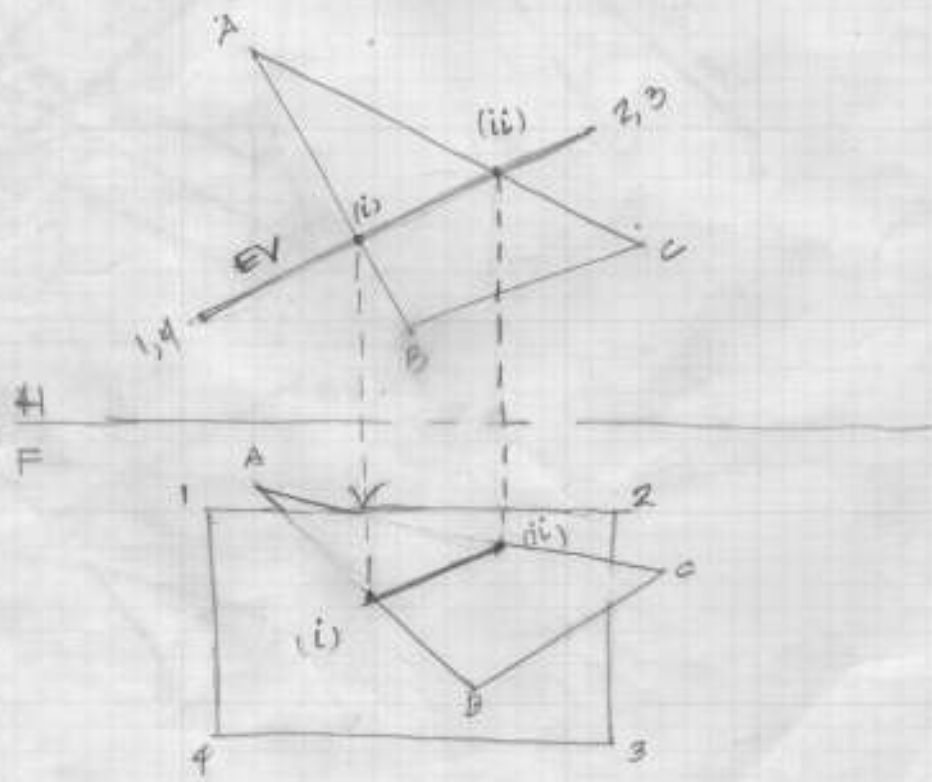
* TWO METHODS! EV ≠ CP



EDGE VIEW METHOD

* A PLANE MUST APPEAR AS AN EV

* PROJECT LINES OF INTERSECTION TO ADJACENT VIEW



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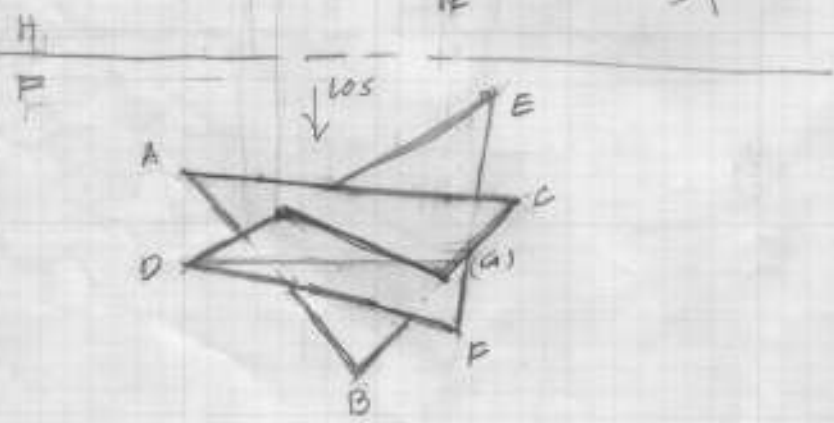
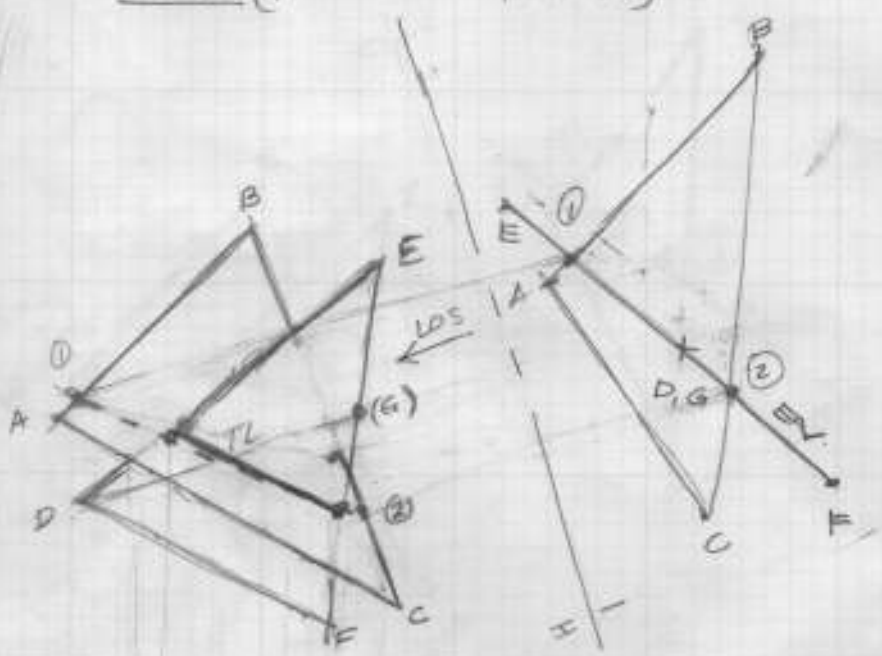
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1) VISIBILITY

2) FIND EV

3) FIND PP'S (PIERCING POINTS)

EV METHOD

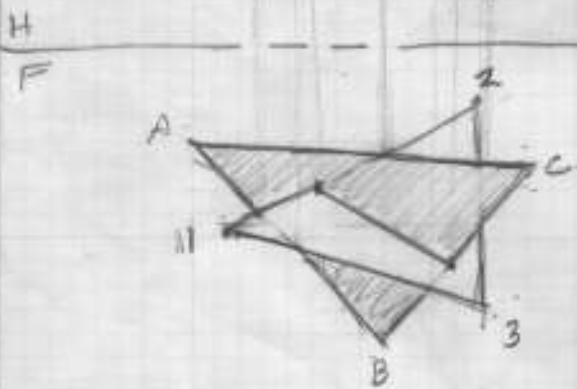
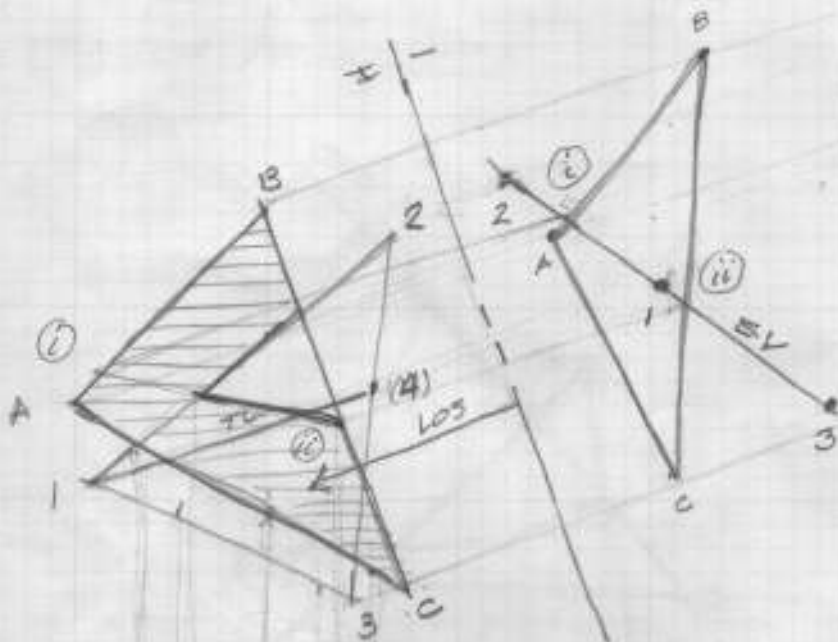


(2)
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EXAMPLE 1 : "FIND THE INTERSECTION OF THE (2) PLANES,"
 USE EDGE VIEW METHOD



- PROCESS
- 1) FIND TL LINE
 - 2) FIND PV / EV
 - 3) FIND INTERSECTION OF PLANES
 - 4) DETERMINE VISIBILITY



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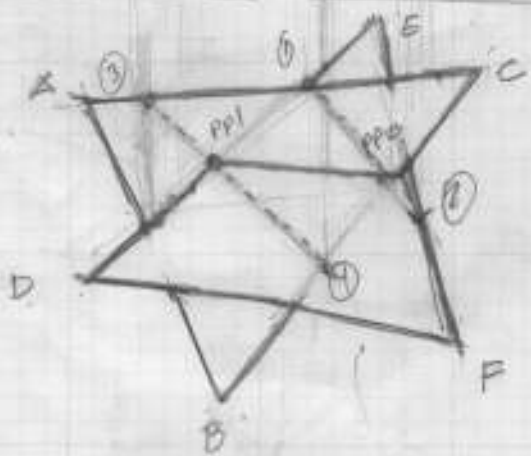
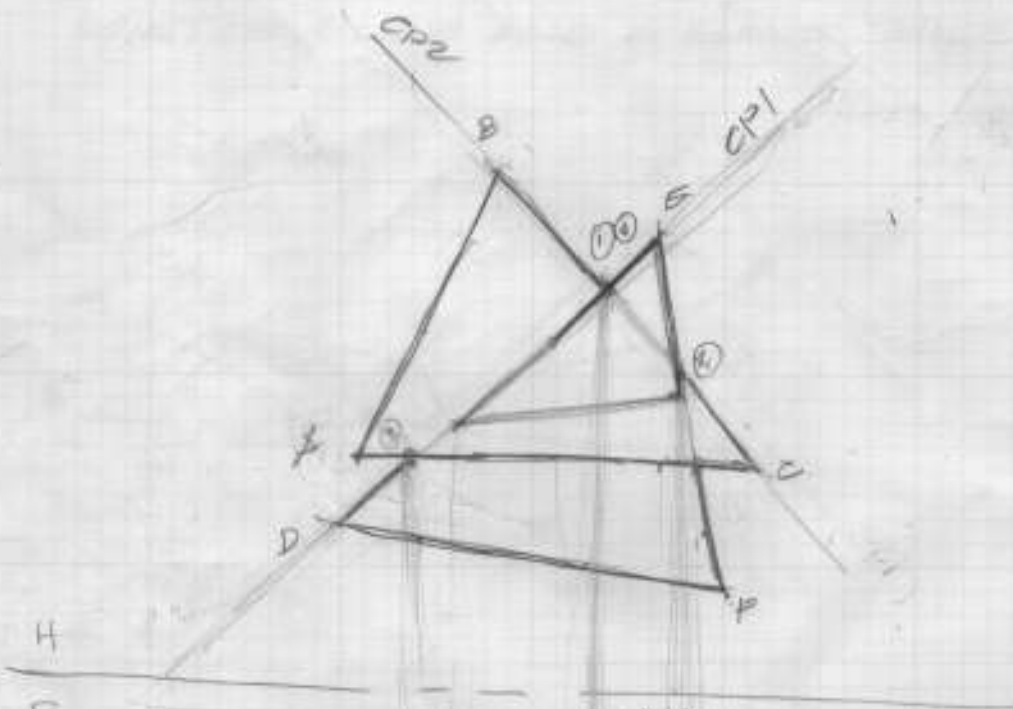
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1) VISIBILITY

2) EST. CP'S

3) PROJECT/FIND PP'S

CP METHOD



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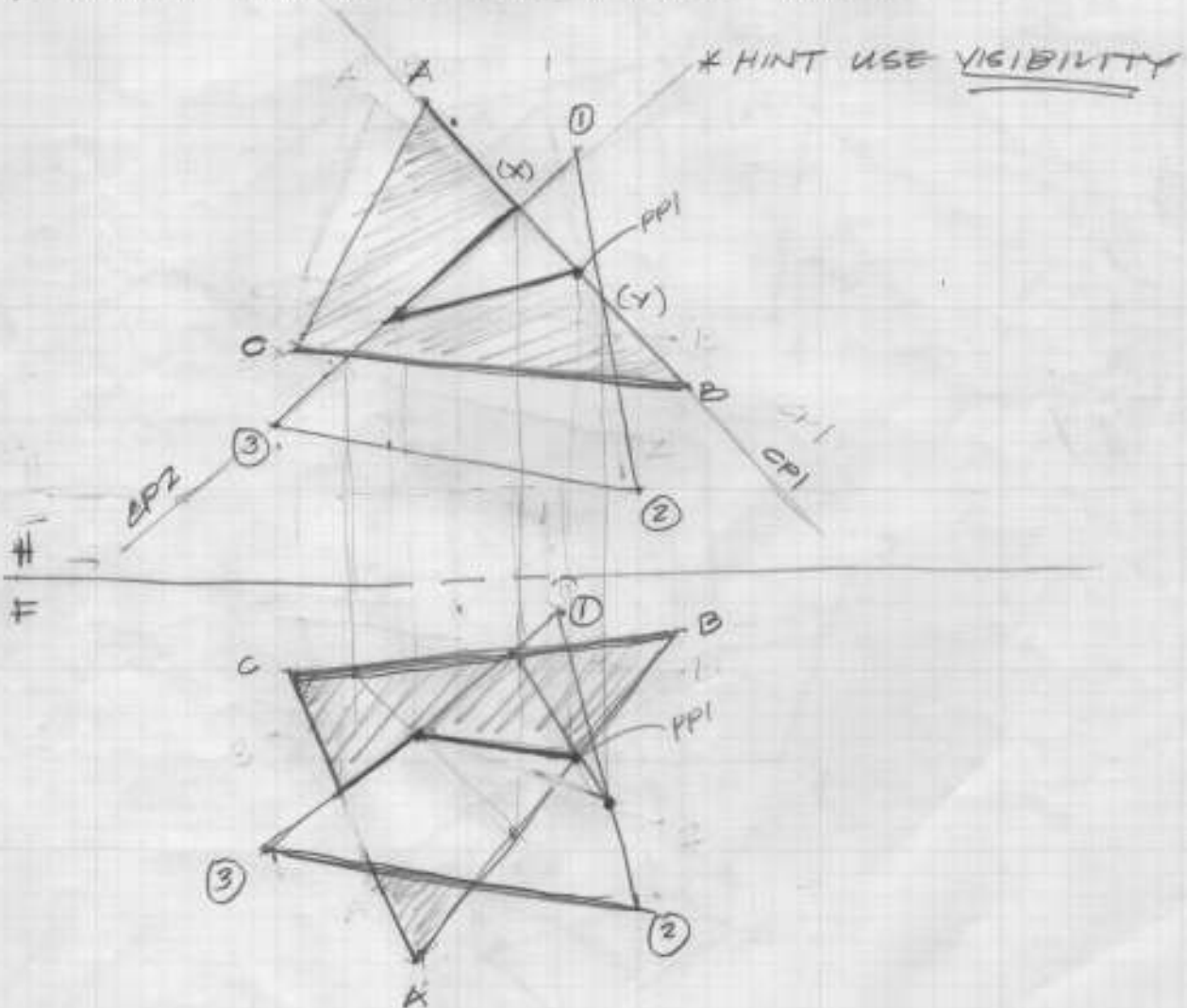
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THE INTERSECTION OF TWO PLANES

CUTTING PLANE METHOD

* IT IS SIMPLY A MATTER OF FINDING THE PERCING POINT OF A LINE AND A PLANE TWICE



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INTERSECTION OF A 3-DIMENSIONAL OBJECT

