





**To Draw: to pull, to make, to delineate**

**Vitruvius: “drawing (disegno) is the father of our three arts, Architecture, Sculpture, and Painting**

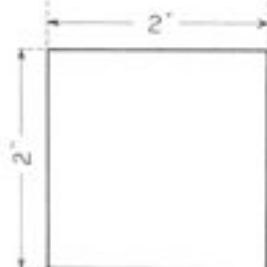
**Vasari: “Drawing as an apparent expression, or a visible image of the thoughts of the mind (esprit) and of what one has formed first in the imagination.”**

## CUBE

FIG. 1.

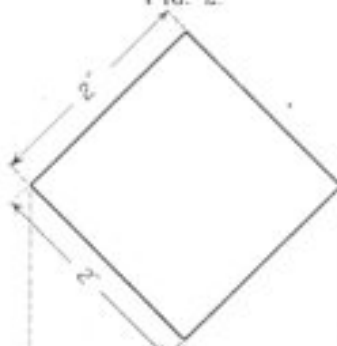


TOP VIEW



FRONT VIEW

FIG. 2.

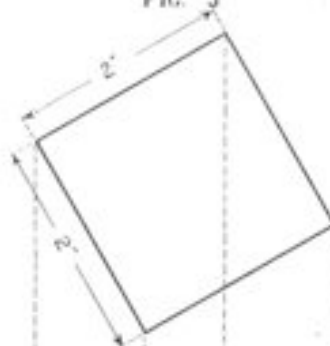


TOP VIEW

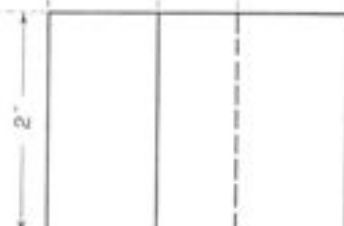


FRONT VIEW

FIG. 3.



TOP VIEW



FRONT VIEW

FIG. 1.

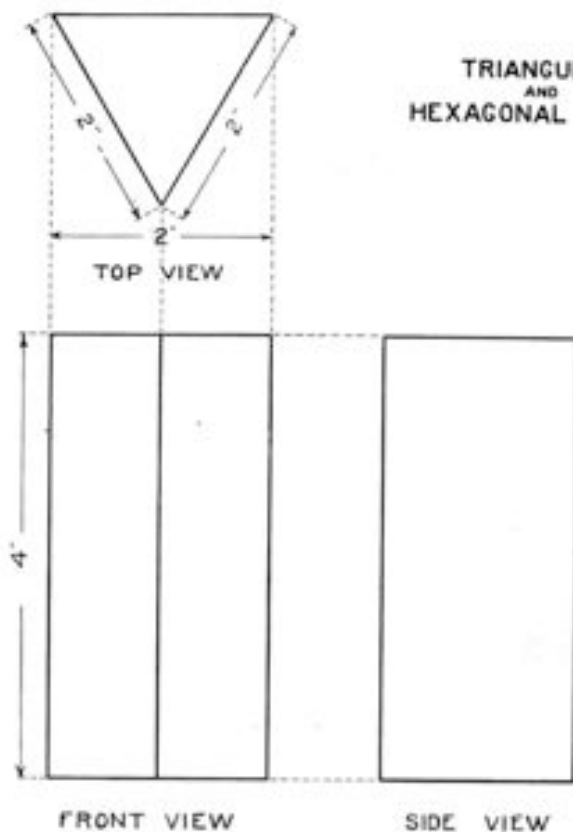
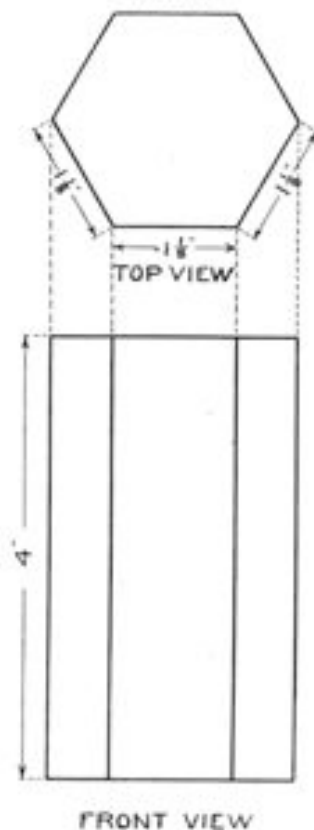
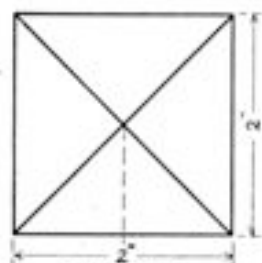
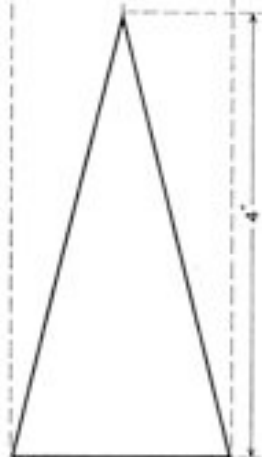


FIG. 2.



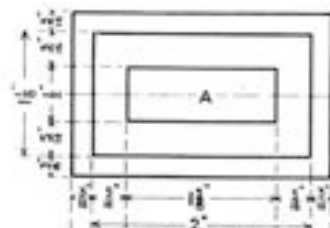


TOP VIEW

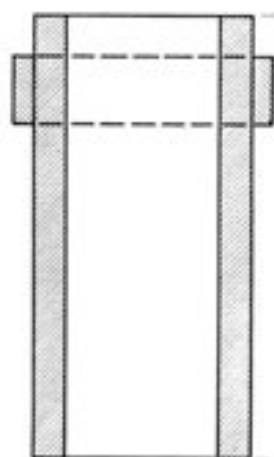


FRONT VIEW

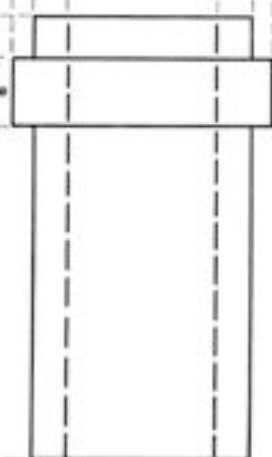
SQUARE PYRAMID  
AND  
CHIMNEY MODEL



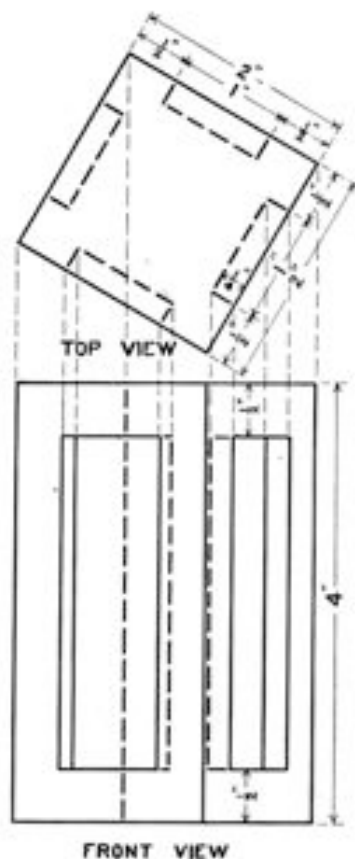
TOP VIEW



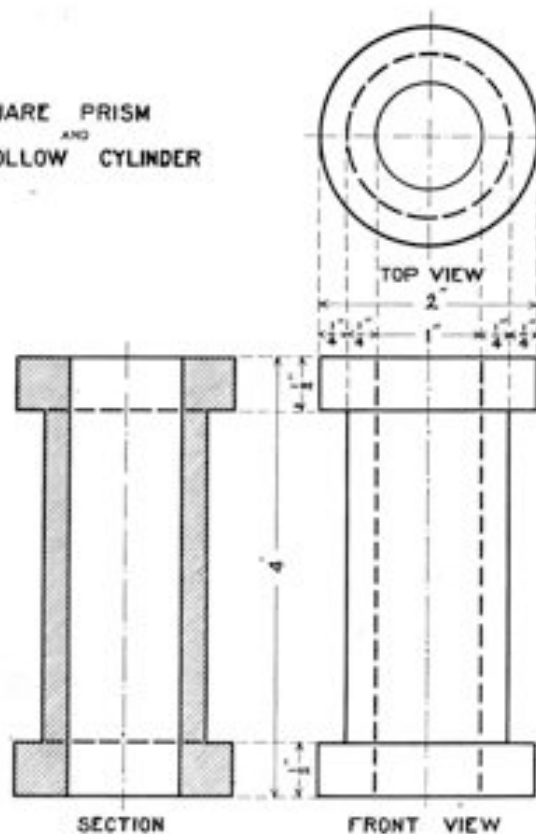
SECTION



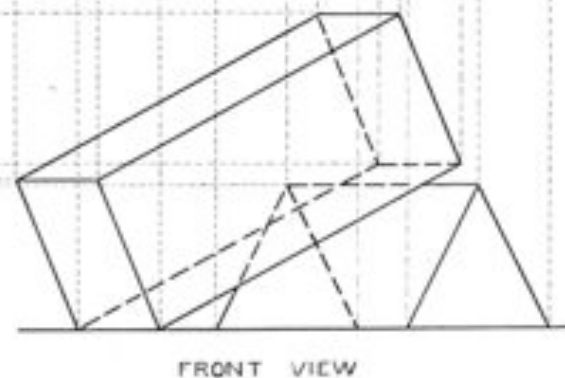
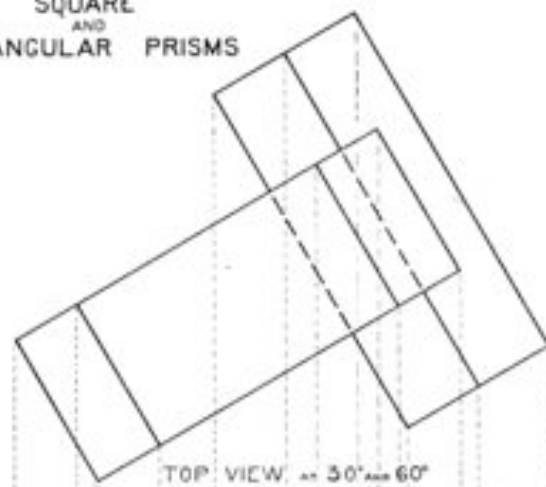
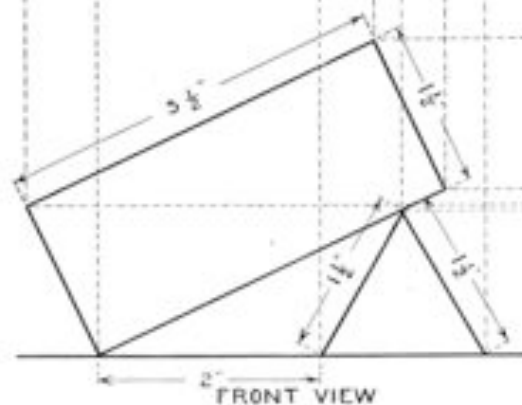
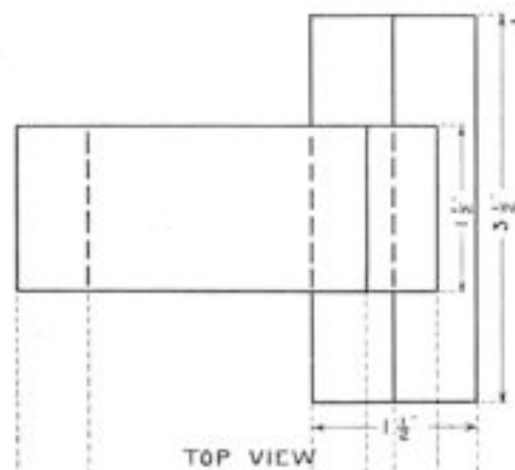
FRONT VIEW

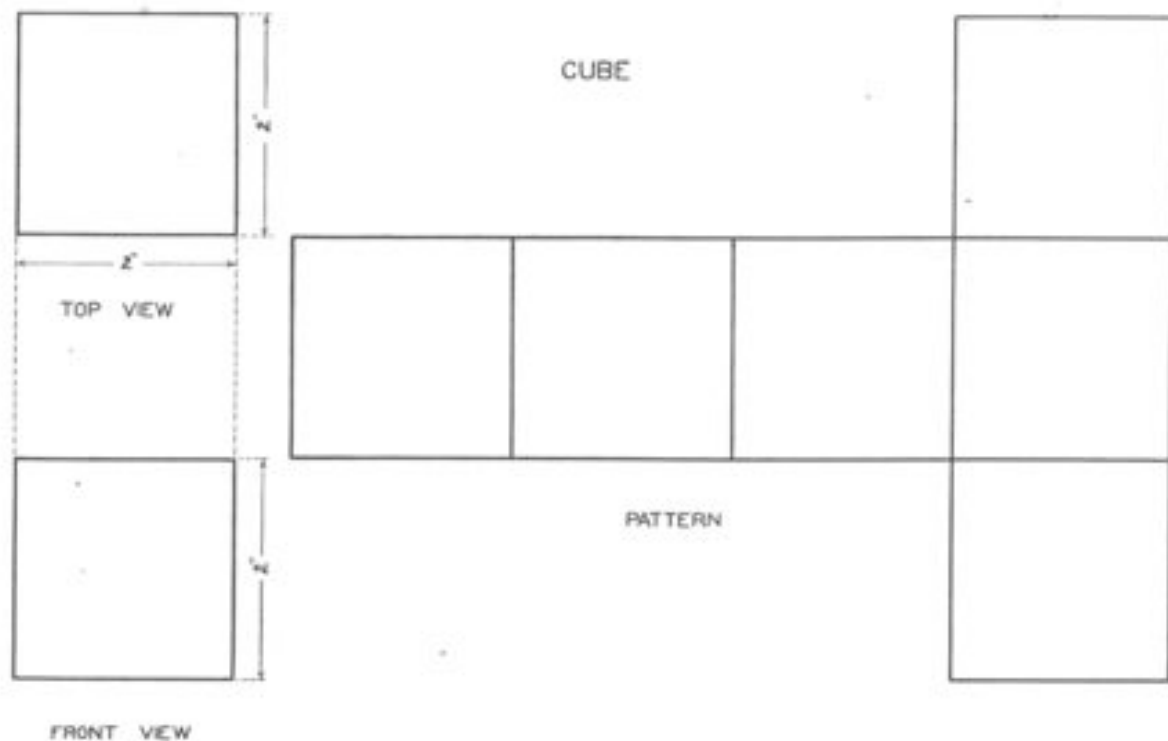


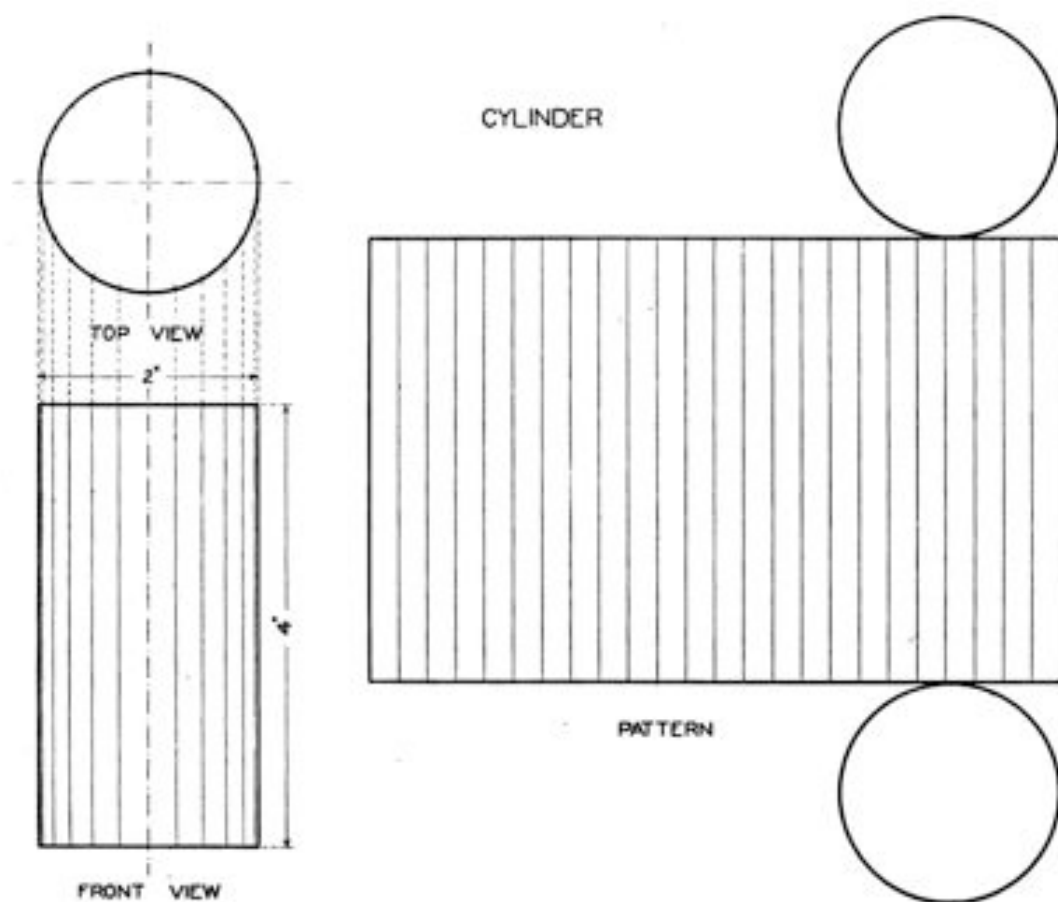
SQUARE PRISM  
AND  
HOLLOW CYLINDER

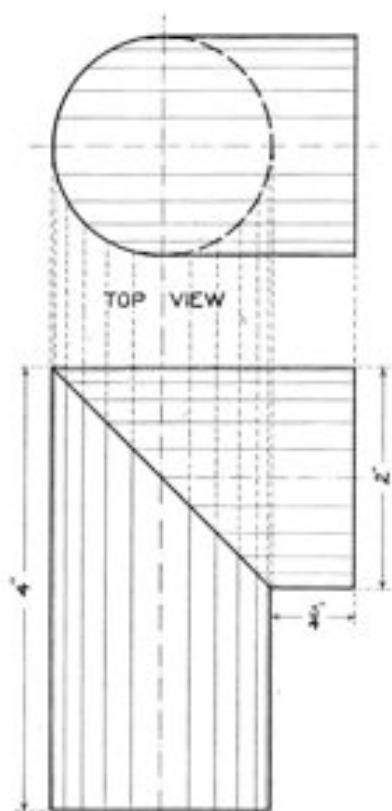


SQUARE  
AND  
TRIANGULAR PRISMS



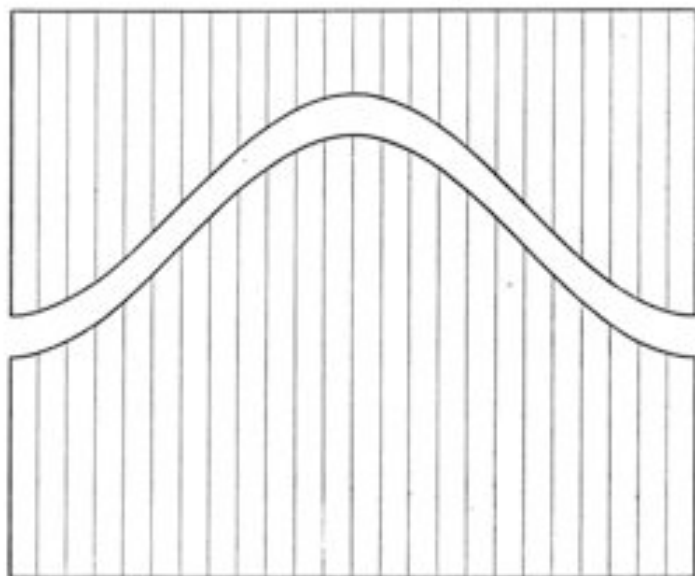




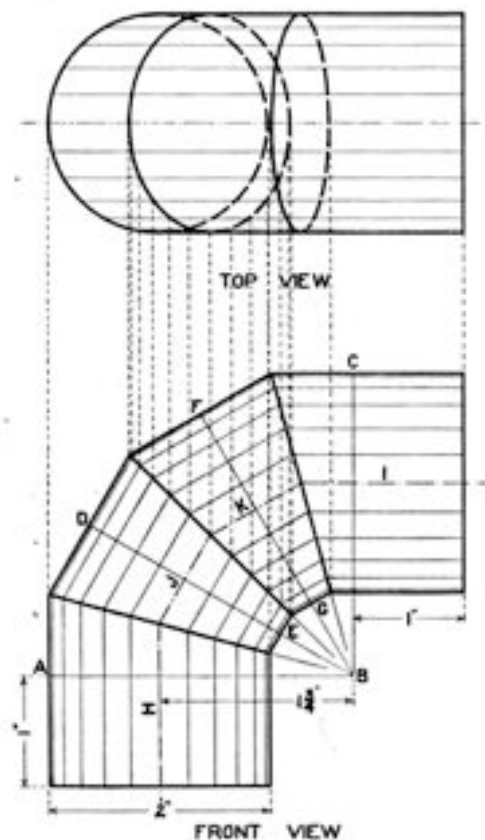


FRONT VIEW

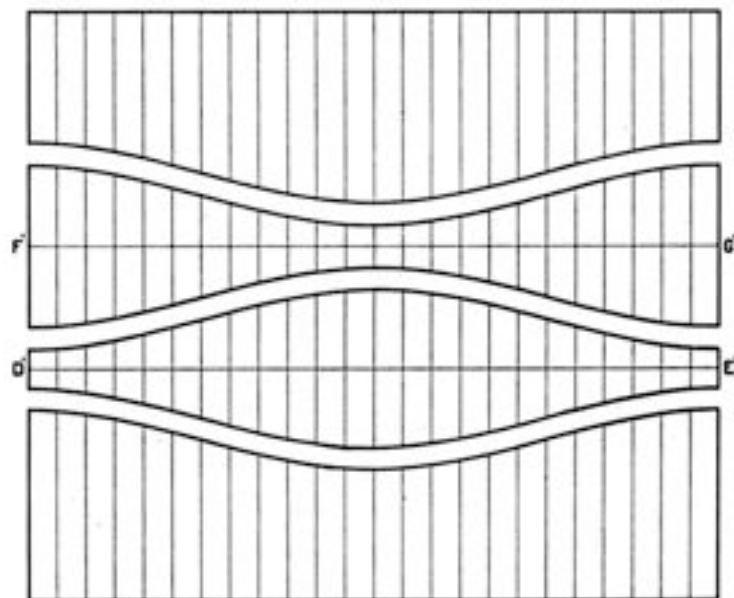
RIGHT ELBOW



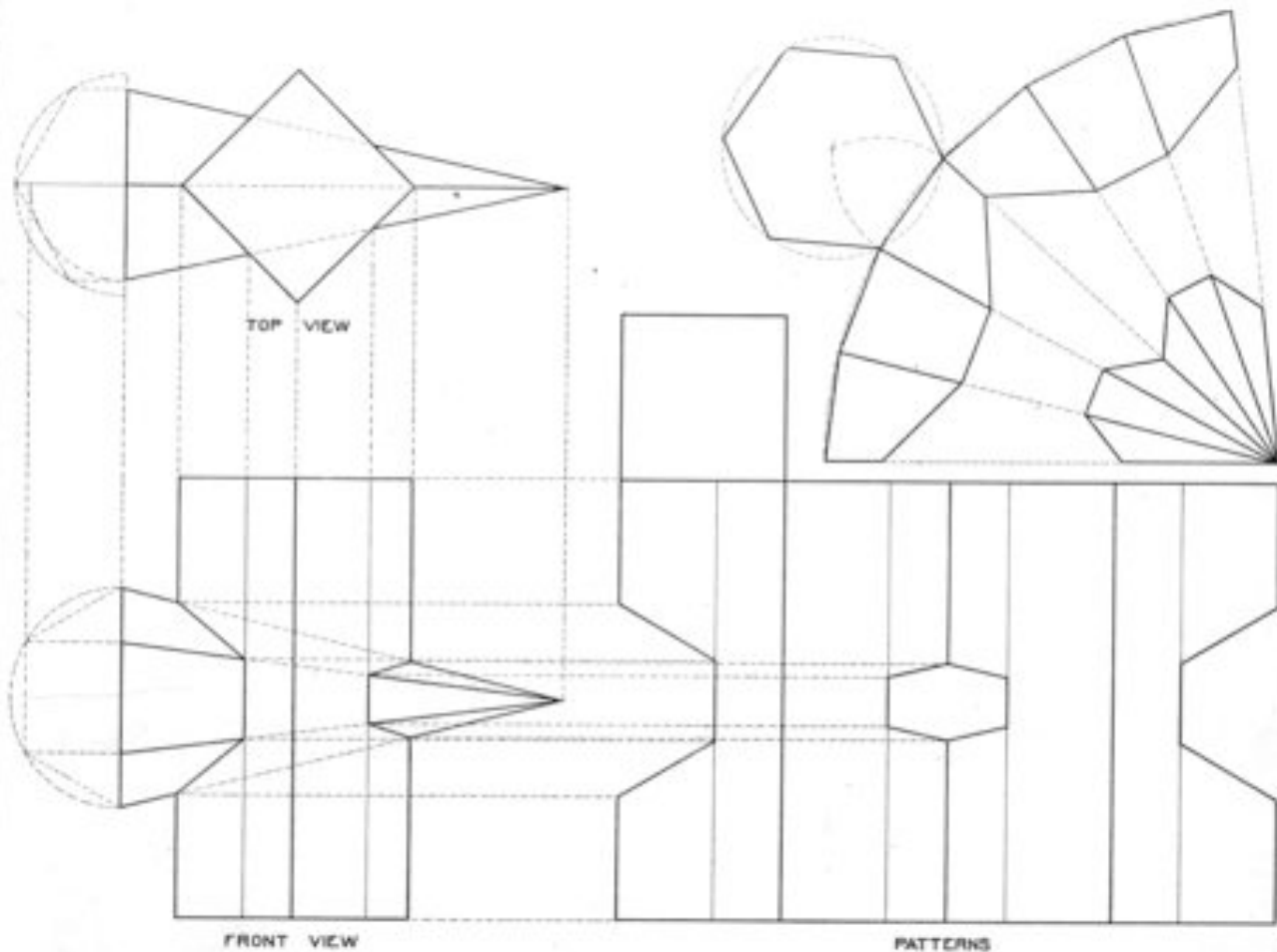
PATTERN

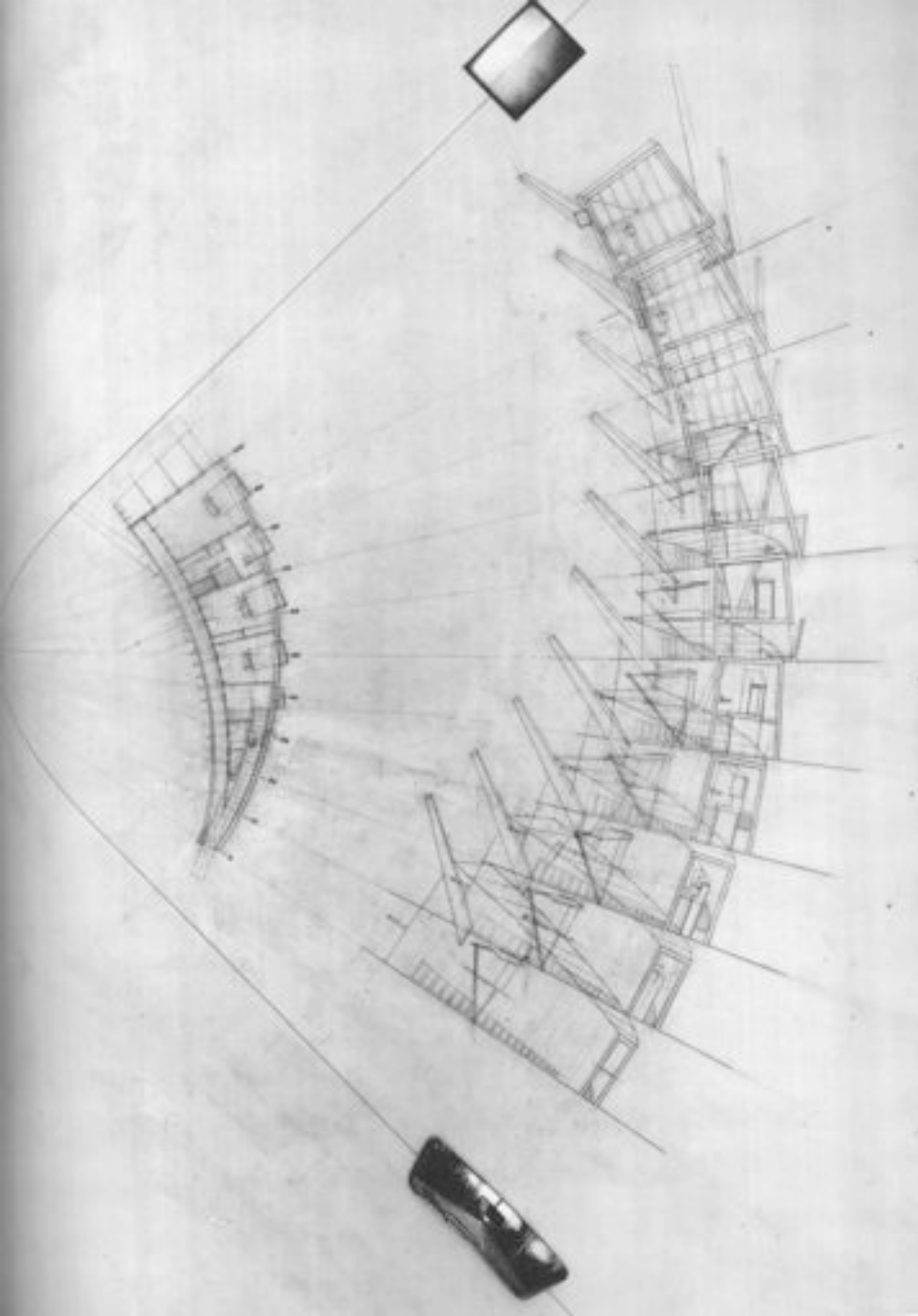


FOUR PART ELBOW



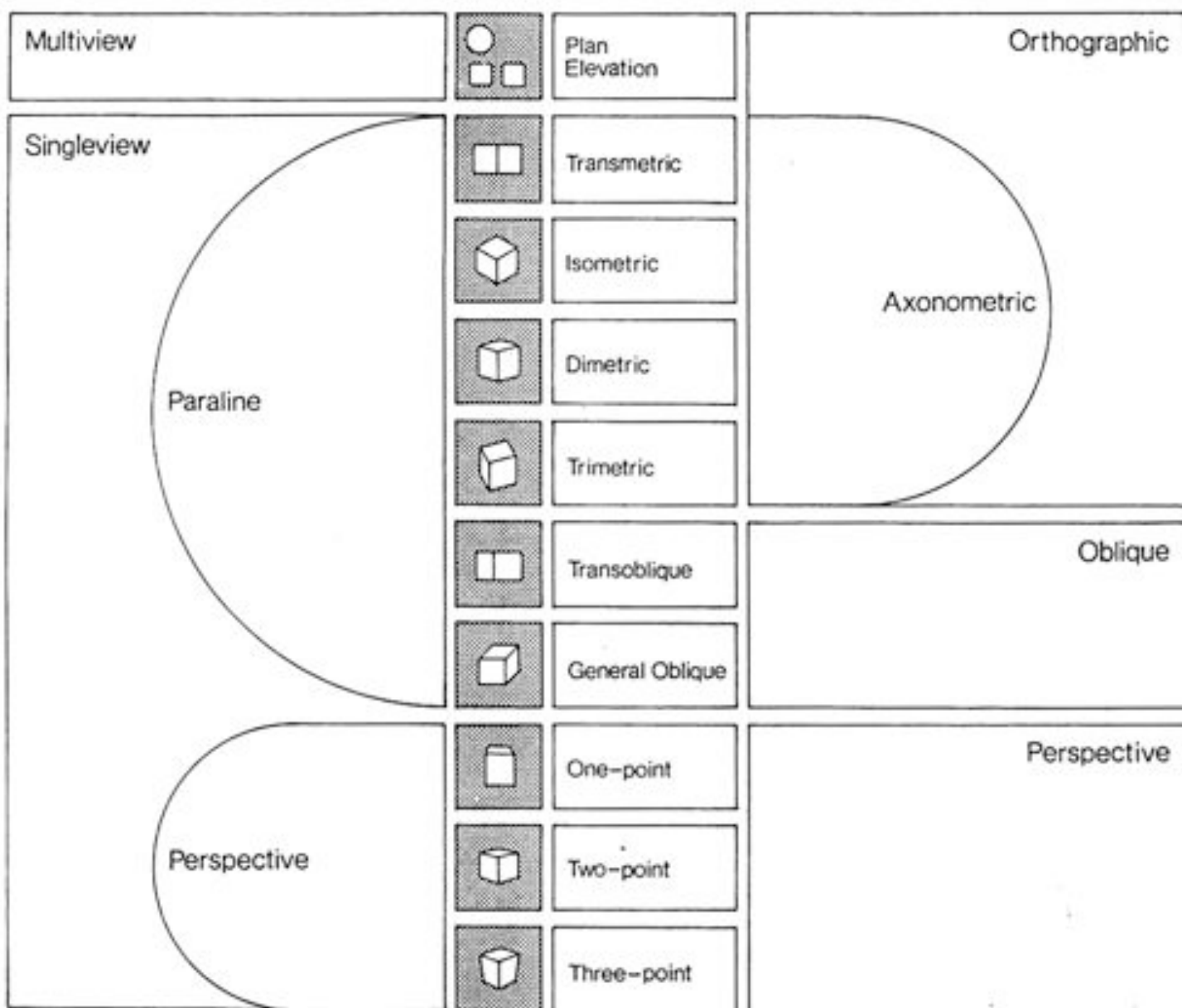
PATTERN



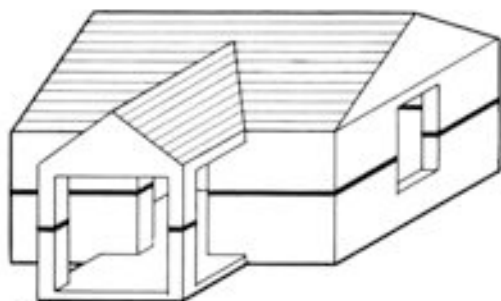


### Pictorial Effect

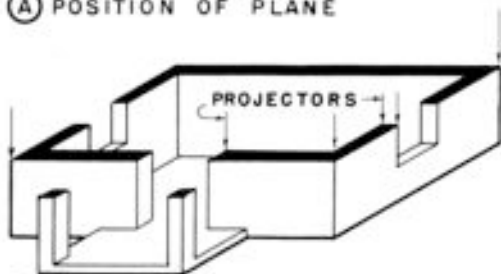
## Projection System



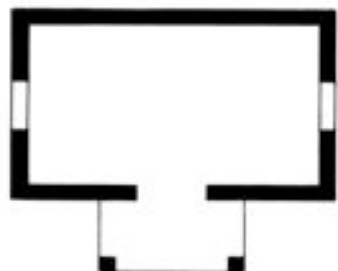
Construction of Multi-View Drawings



(A) POSITION OF PLANE

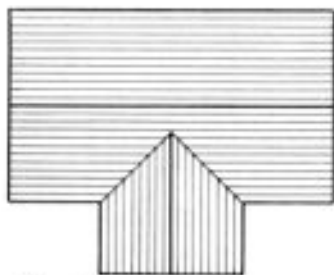


(B) TOP PART REMOVED



(C) PLAN OF REMAINDER

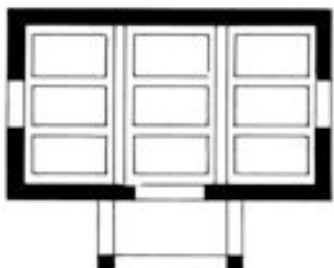
MAKING A FLOOR PLAN



(D) ROOF PLAN

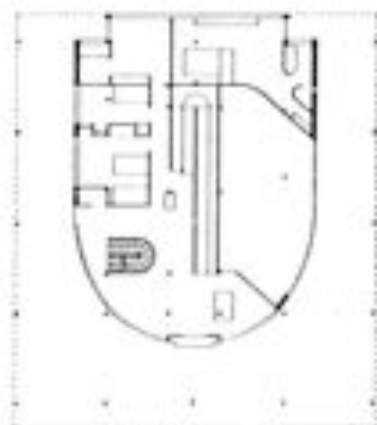
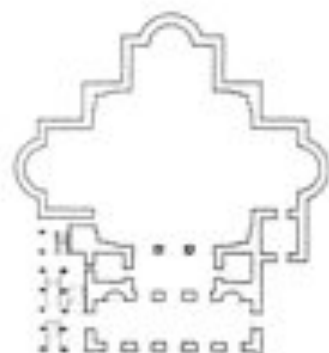
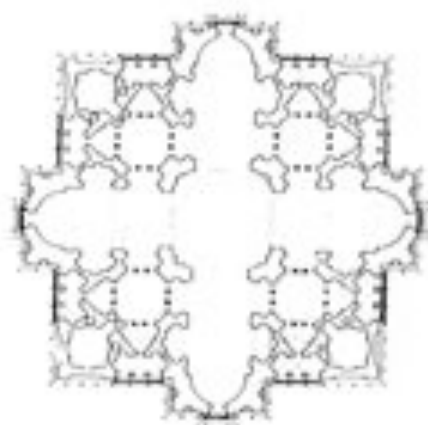
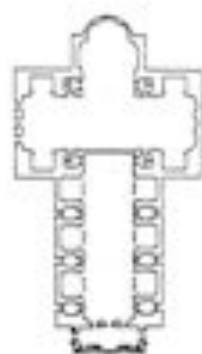
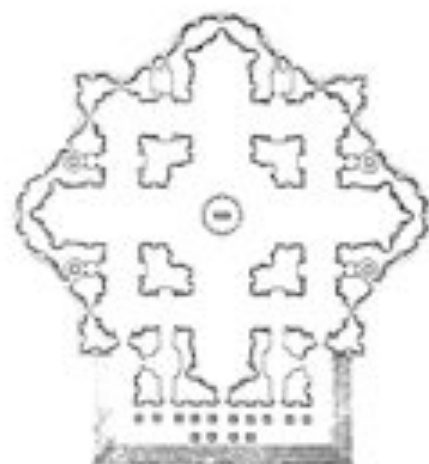


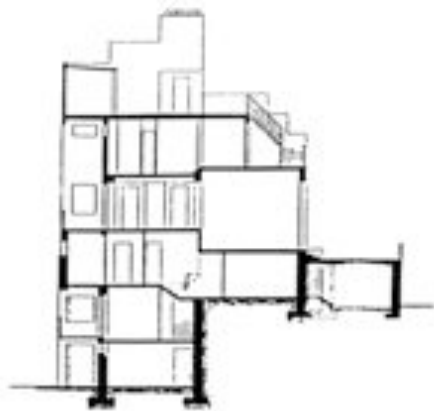
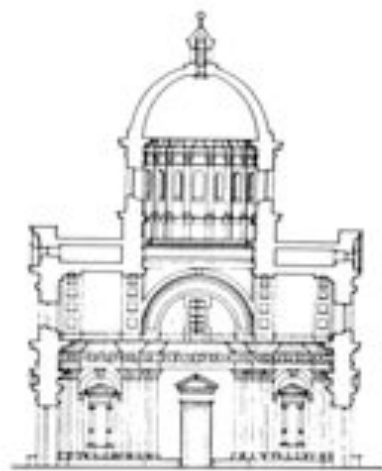
(E) FRAMING PLAN

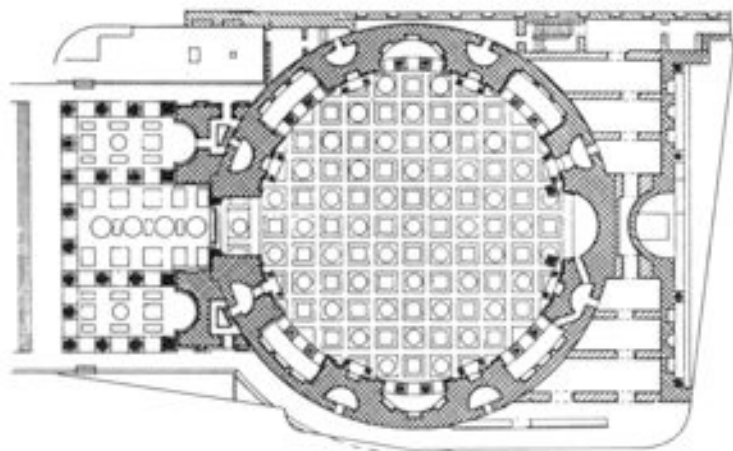
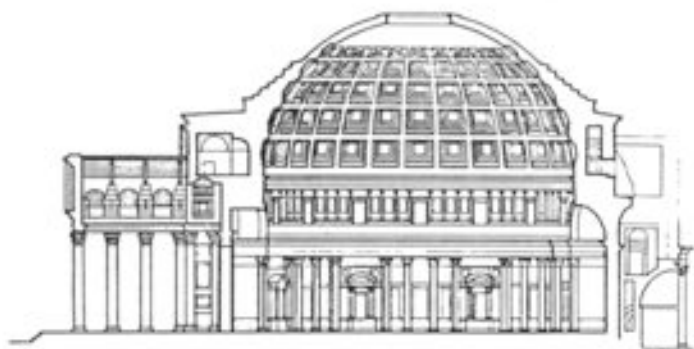


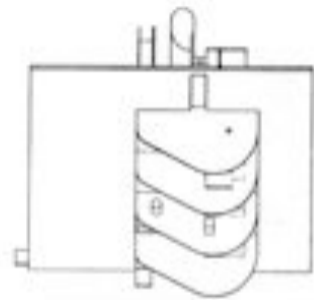
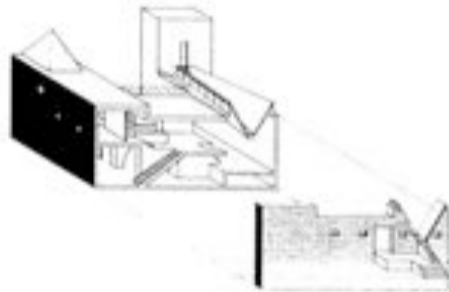
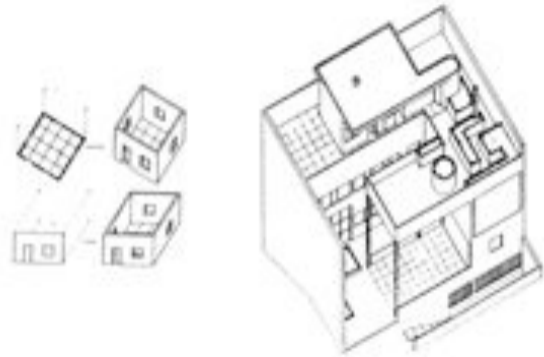
(F) REFLECTED PLAN

KINDS OF PLANS



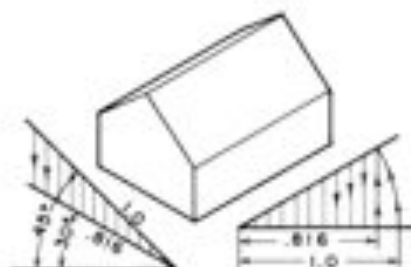




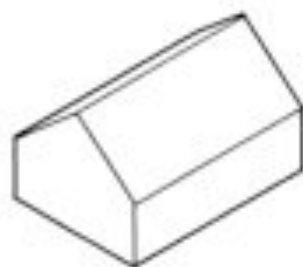




(A) ISOMETRIC AXES

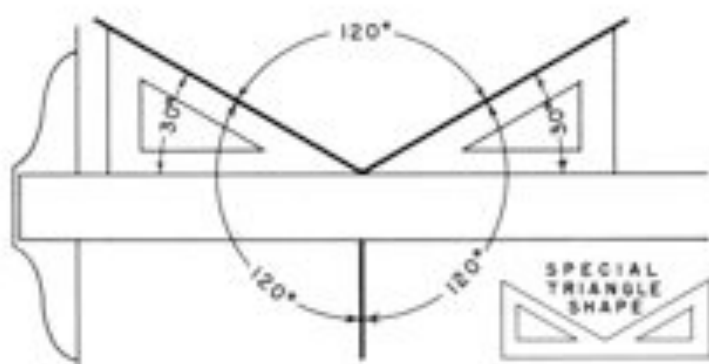


(B) ISOMETRIC PROJECTION



(C) ISOMETRIC DRAWING

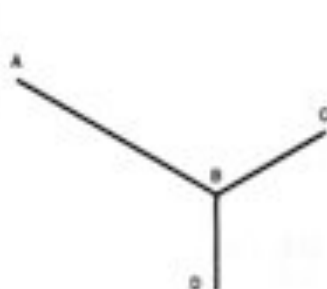
ISOMETRIC PROJECTION AND DRAWING



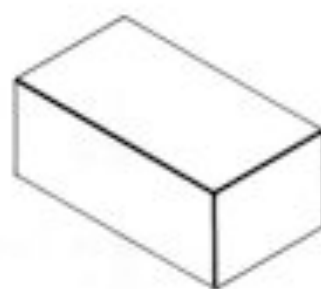
(D) THE ISOMETRIC ANGLES AND AXES



(E) MULTI-VIEW DRAWINGS



(F) AXES LOCATED

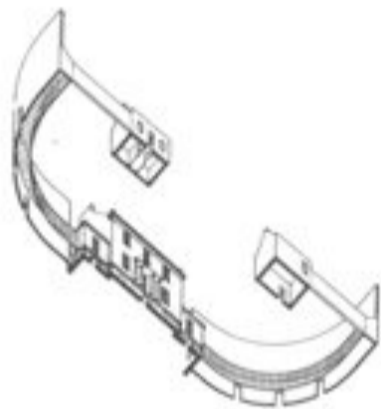


(G) OBJECT DRAWN

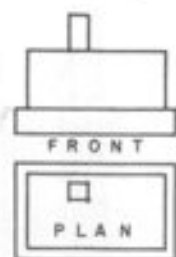
MAKING AN ISOMETRIC DRAWING



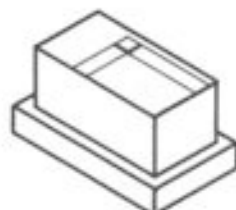
(H) ONE AXIS VERTICAL (I) ONE AXIS HORIZONTAL (J) ONE AXIS HORIZONTAL (K) INCLINED (L) POSITIONS OF THE ISOMETRIC AXES



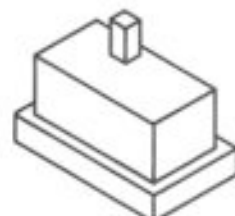
# Isometric Drawing



STEP-1

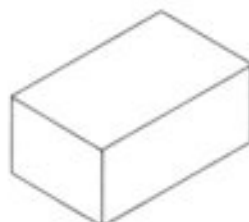
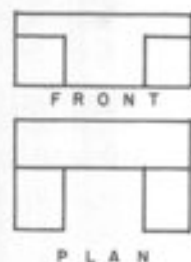


STEP-2

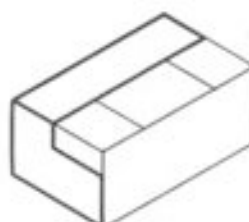


STEP-3

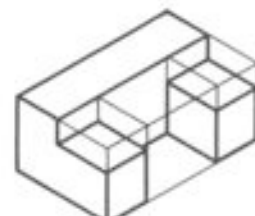
T H E O F F S E T M E T H O D



STEP-1

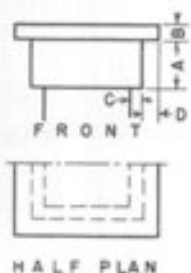


STEP-2

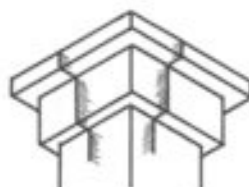


STEP-3

T H E B O X M E T H O D



STEP-1

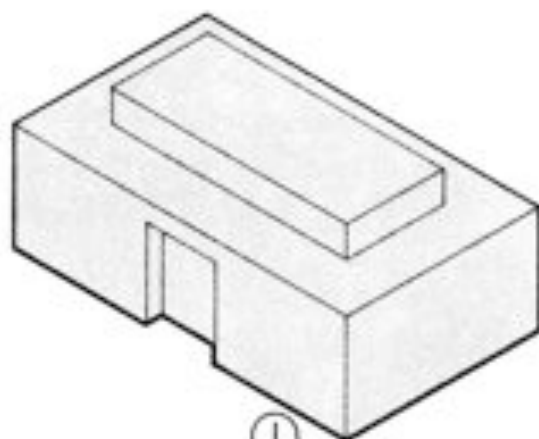


STEP-2

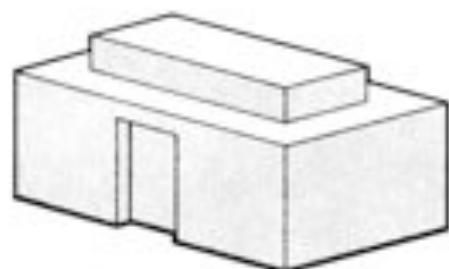


L O O K I N G U P L O O K I N G D O W N  
T H E S E C T I O N M E T H O D

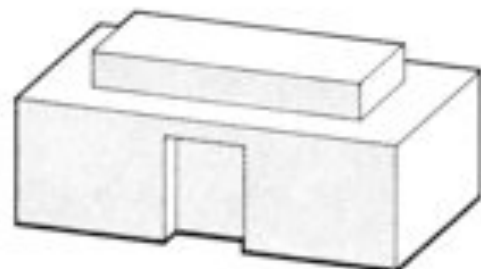
FIG-14 ISOMETRIC CONSTRUCTION METHODS



ISOMETRIC DRAWING  
ALL AREAS EMPHASISED EQUALLY

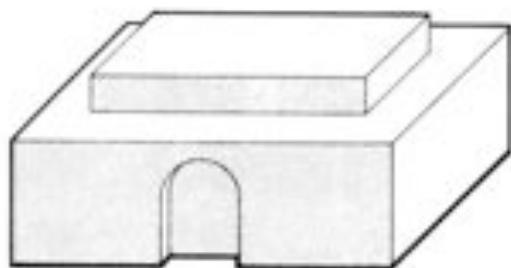


SYMMETRICAL



UNSYMMETRICAL

DIMETRIC DRAWING  
EMPHASISED AREAS ARE SHADED

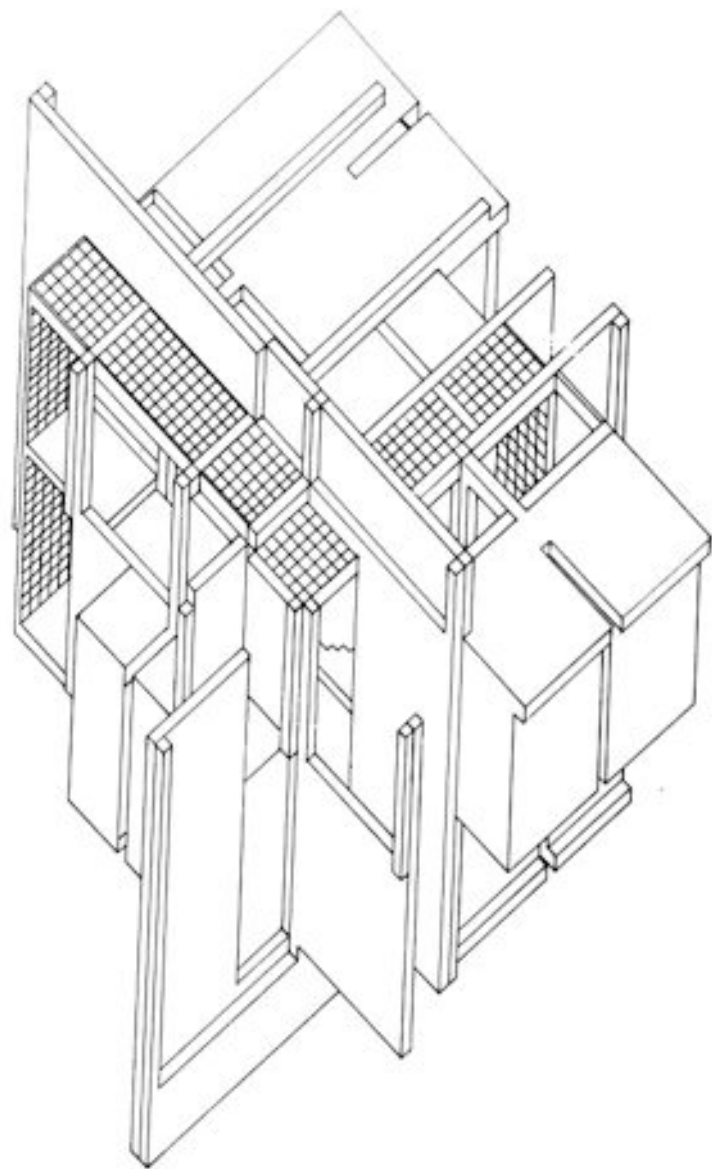


ELEVATION OBLIQUE



PLAN OBLIQUE

OBLIQUE DRAWING  
TRUE SHAPE AREAS EMPHASISED AND SHADED





#### 4H

- This dense grade of lead is best suited for accurately marking and laying out light construction lines.
- The thin, light lines are difficult to read and reproduce and should therefore not be used for finish drawings.
- When applied with too much pressure, the dense lead can engrave paper and board surfaces, leaving grooves that are difficult to remove.

#### 2H

- This medium-hard lead is also used for laying out drawings and is the densest grade of lead suitable for finish drawings.
- 2H lines do not erase easily if drawn with a heavy hand.

#### F and H

- These are general-purpose grades of lead suitable for layouts, finish drawings, and lettering.

#### HB

- This relatively soft grade of lead is capable of dense linework and lettering.
- HB lines erase and print well but tend to smear easily.
- Experience and good technique are required to control the quality of HB linework.

#### B

- This soft grade of lead is used for very dense linework and lettering.

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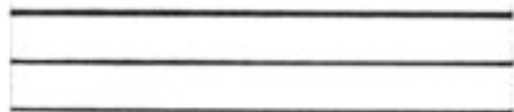
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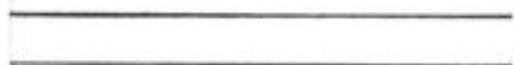
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### Heavy

- Heavy solid lines are used to delineate the profiles of plan and section cuts (see pages 42 and 58) as well as spatial edges (see page 81).
- H, F, HB, B
- Use a lead holder or draw a series of closely spaced lines with a 0.3 mm or 0.5 mm mechanical pencil; avoid using a 0.7 mm or 0.9 mm pencil for drawing heavy line weights.
- Pressing too hard to make a line means that you are using too hard of a lead.



### Medium

- Mediumweight solid lines indicate the edges and intersections of planes.
- H, F, HB



### Light

- Lightweight solid lines suggest a change in material, color, or texture, without a change in the form of an object.
- 2H, H, F



### Very Light

- Very light solid lines are used to lay out drawings, establish organizing grids, and indicate surface textures.
- 4H, 2H, H, F

























