

The background of the slide is a technical drawing featuring several interlocking gears of different sizes. Overlaid on the gears are various drafting tools: a black pencil in the upper right, a blue and yellow pencil in the lower right, and a pair of compasses in the center. The drawing uses various line types, including solid, dashed, and hatched lines, to represent mechanical components.

L2_Drawing Instruments and Line types

B. SANTHI

Assistant t Professor

Department of MECHANICAL Engineering

NIT Goa

Items required for Drawing class

Drawing board

Drawing sheet – A2 Size

Mini-drafter/ Drafting machine/ T-Square

Instrument box containing Compass, Bow Compass, Divider

Scale(Ruler)

Protractor, ProCircle

Drawing pencils- 2H,H, HB, B

Drawing sheet Holder

Sharpener, Eraser

Drawing clip/Adhesive tape ->Paper Knife

Cloth to Clean

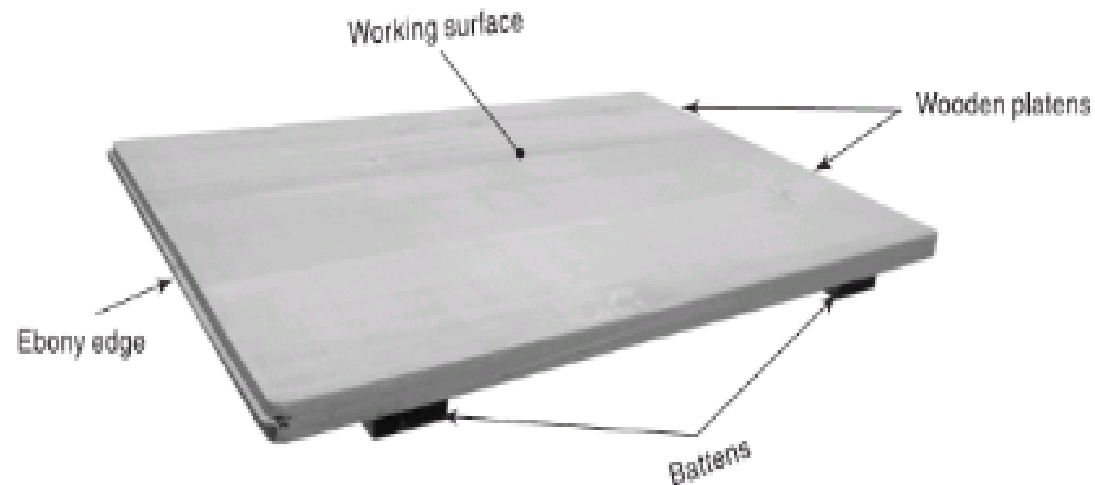
Rough Sheets

Drawing board

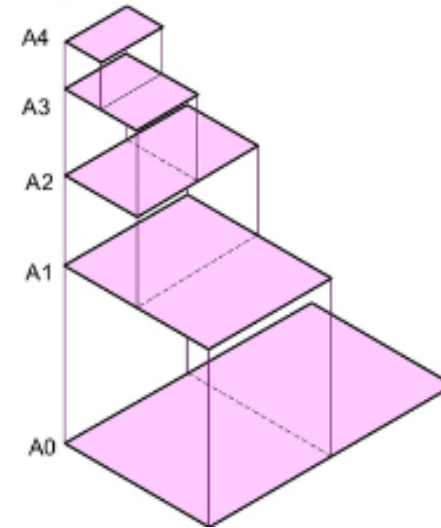
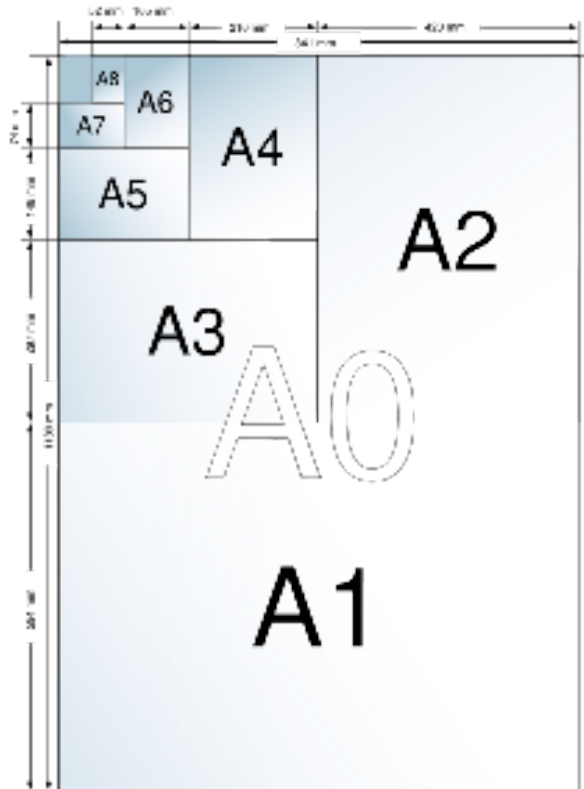


The standard size of drawing boards recommended by ISI are given below.

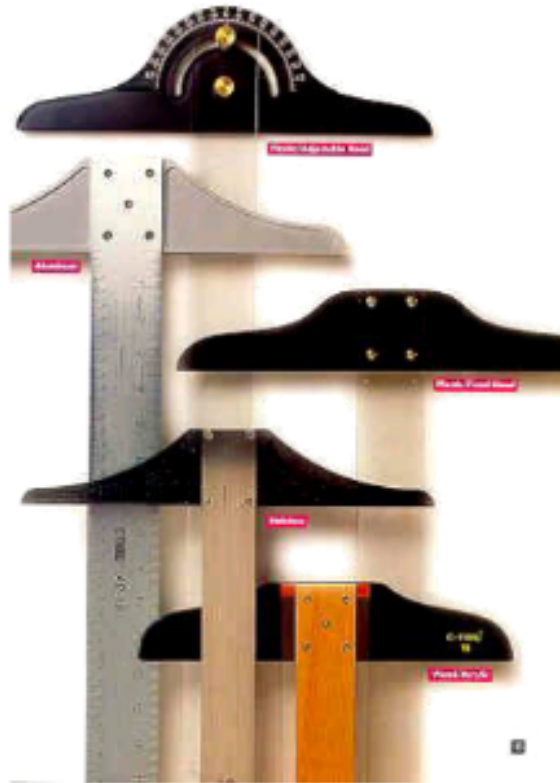
Sl.No.	Designation	Dimension in MM	Name
1	BO	1500 x 1000	Antiquarian
2	B1	1000 x 700	Double elephant
3	B2	700 x 500	Imperial
4	B3	500 x 350	Half - imperial
5	B4	350 x 250	Quarter - imperial



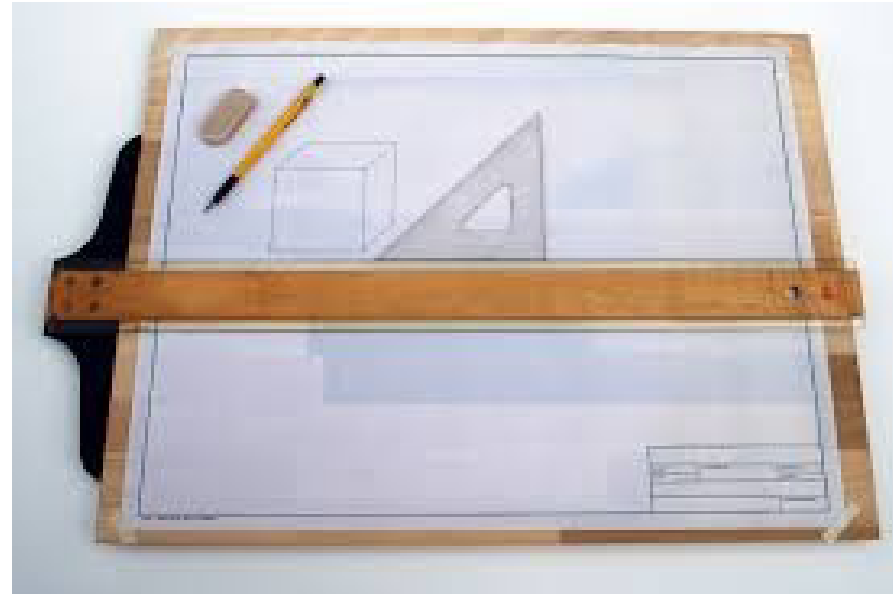
Drawing Sheet



SIZE (MILLIMETERS)			LETTER SIZE
WIDTH		LENGTH	
210	x	297	A4
297	x	420	A3
420	x	594	A2
594	x	841	A1
841	x	1189	A0

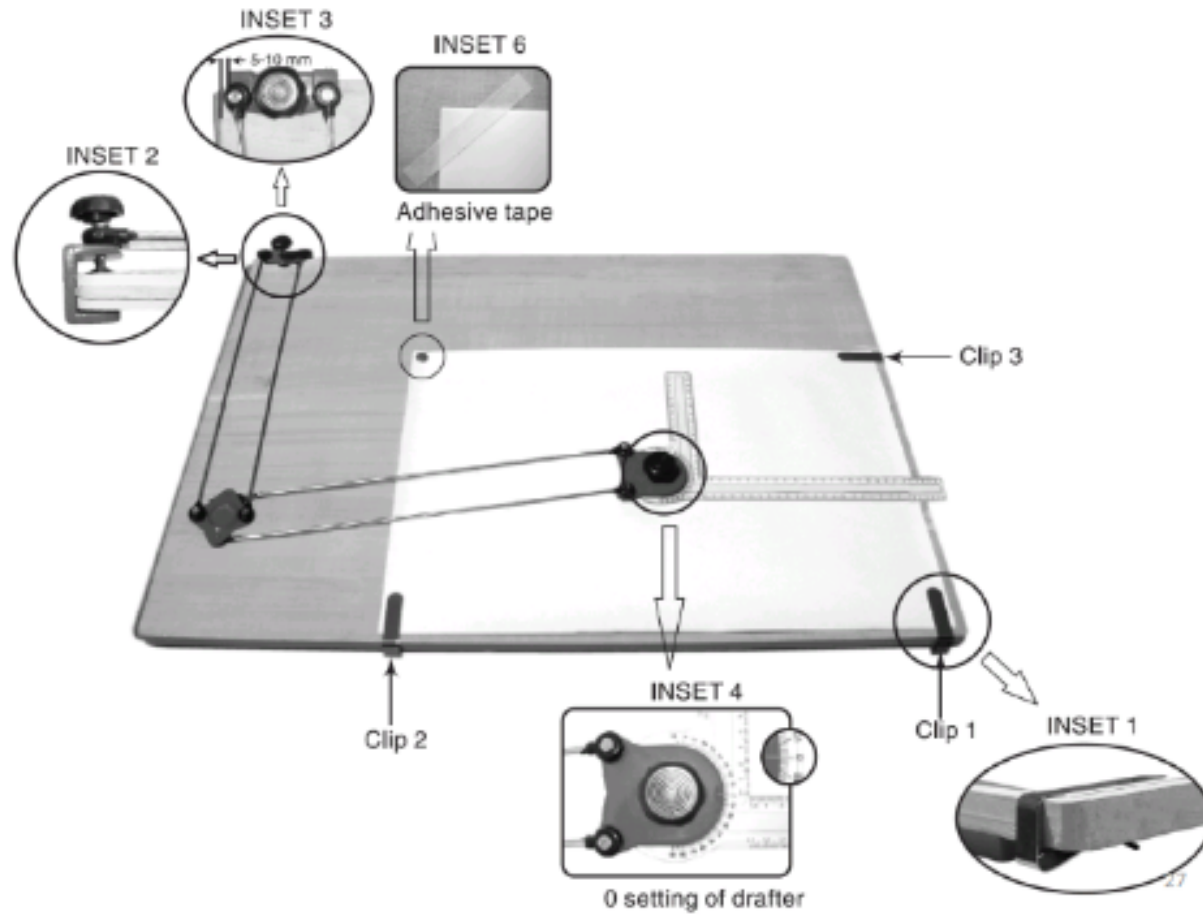


T-Square

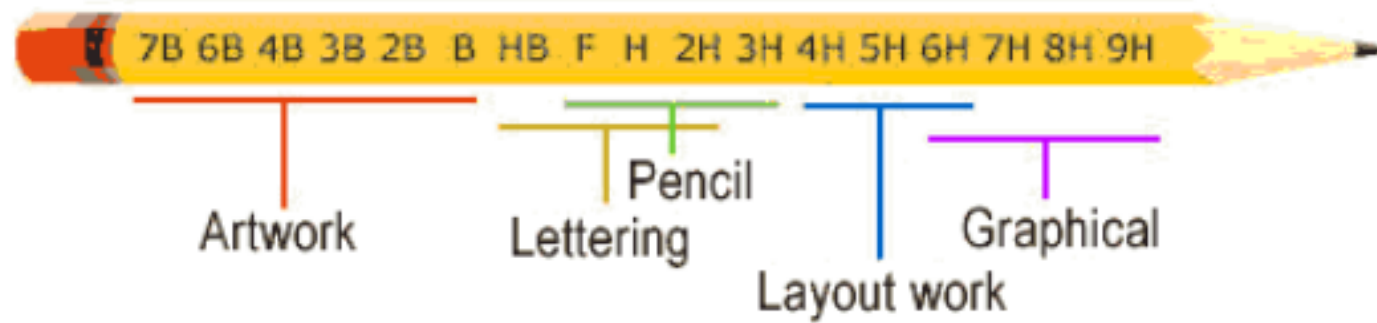


Set square

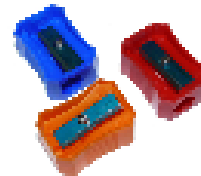
Mini-Drafter

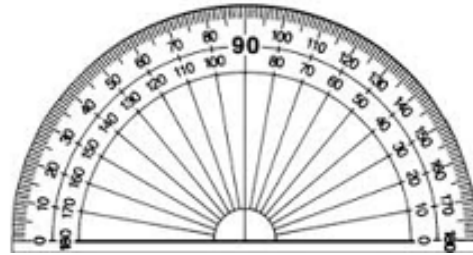


Drawing pencil grades

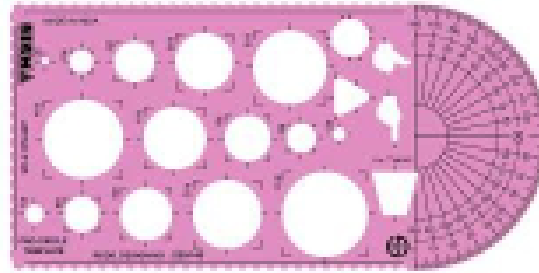


Drawing Clips



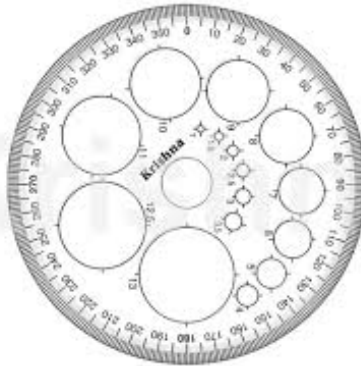
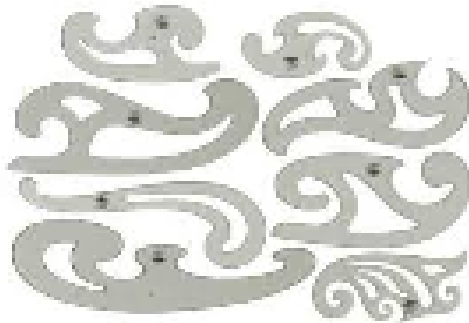


Protector



Bow Compass

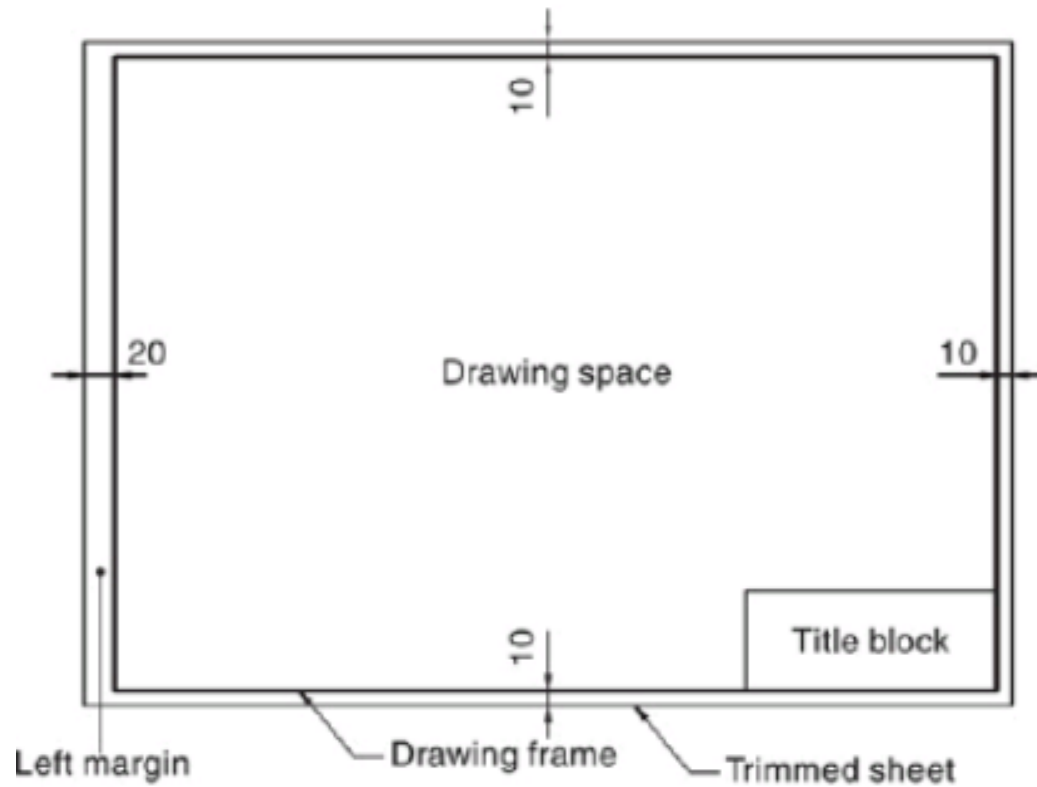
Drawing Box



French Curve
Pro-Circle

Drawing Paper
Holder

Drawing Sheet Layout




Trimmed sheet

Drawing margin

Title Block

Location - Bottom right corner – 185 mm x 65 mm (BIS)

NATIONAL INSTITUTE OF TECHNOLOGY, GOA			20
TITLE: LETTERING			15
NAME: B SANTHI			10
ROLL NO:		SCALE: 1:1	10
DATE:	BATCH:	CHECKED BY	10

110
75

SCALE 1:1 for full size
 SCALE X:1 for enlargement scales
 SCALE 1:X for reduction scales

Introduction - Lines

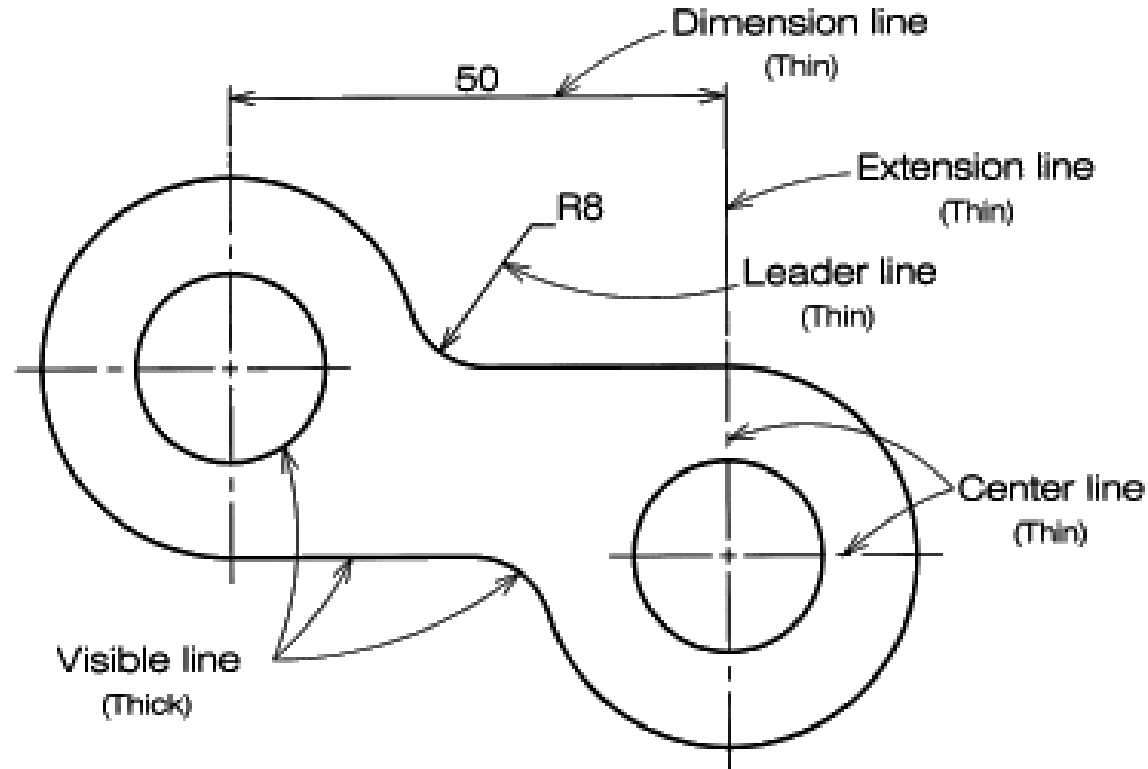
The word language is inadequate for describing the size, shape and features completely as well as concisely.

Graphics Language

- Lines
- *Dimensioning*
(Combination of both graphic and word language)

Introduction – Line Types

Each line on a drawing represents specific precise information regarding the components design.



Types of Lines

Common

Type:
(thickness)

Example:

Application:

Continuous
0.7mm

A 

Visible outlines

Continuous (thin)
0.3mm

B 

Dimension lines

Short dashes
0.3mm

C 

Hidden detail

Long chain
0.3mm

D 

Center lines




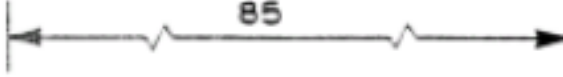
Chain, thick at ends
0.7 – 0.3mm

E 

Section
cutting planes

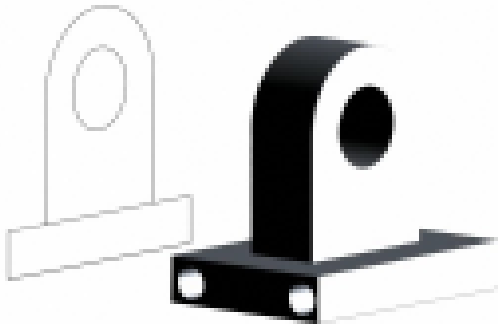
Types of Lines

Special

Type: (thickness)	Example:	Application:
Short chain 0.3mm	F 	Developed views
Continuous wavy boundaries 0.3mm	G 	Broken
Straight zigzag 0.3mm	H 	Break lines
Straight lines with two short zigzags 0.3mm	I 	Dimension lines

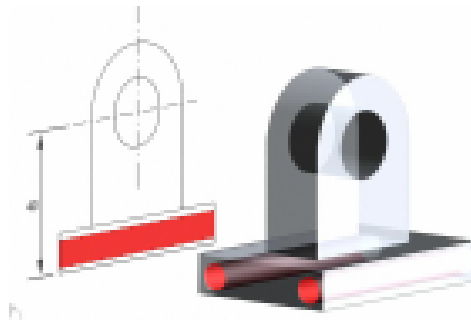
Visible lines

- To draw outlines of visible edges.
- Drawn in continuous thick lines.



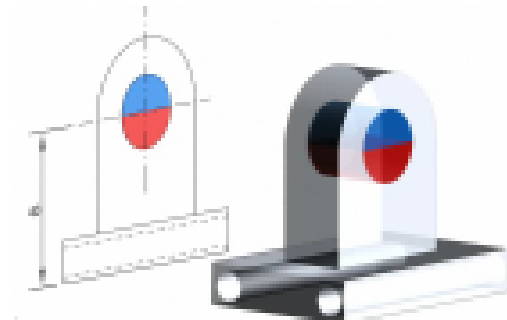
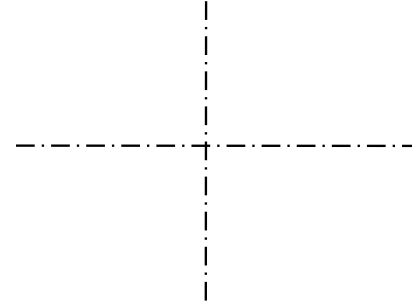
Hidden lines

- Medium thick lines.
- To draw invisible edges.

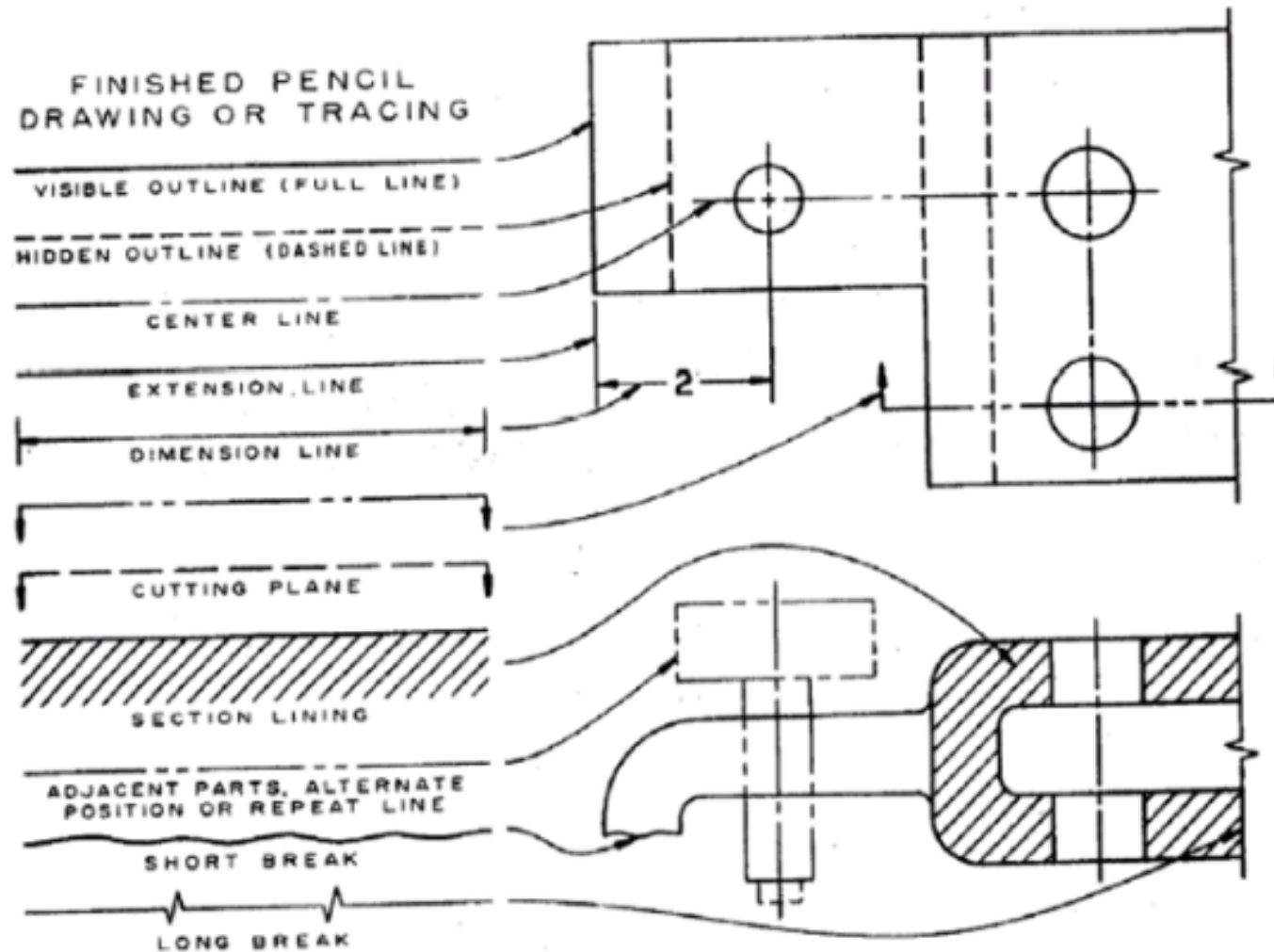


Center lines

- Thin lines with alternate long dash and dot.
- To draw symmetrical objects.



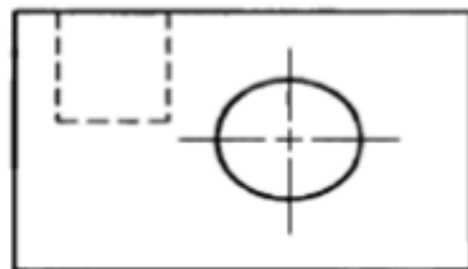
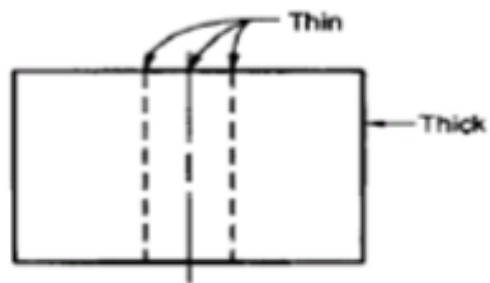
Example of different Lines in a drawing



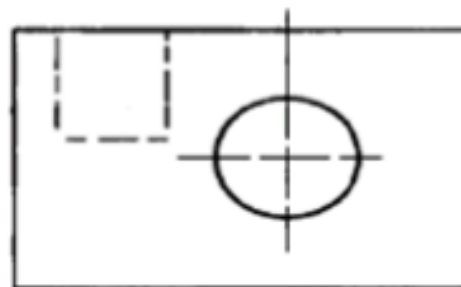
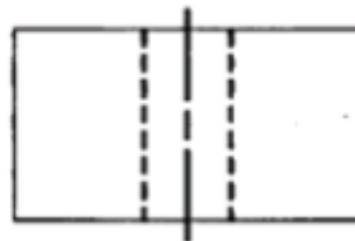
Good

Black, crisp & consistent line

Sharp corner



Bad



Thank You