ENGINEERING GRAPHICS

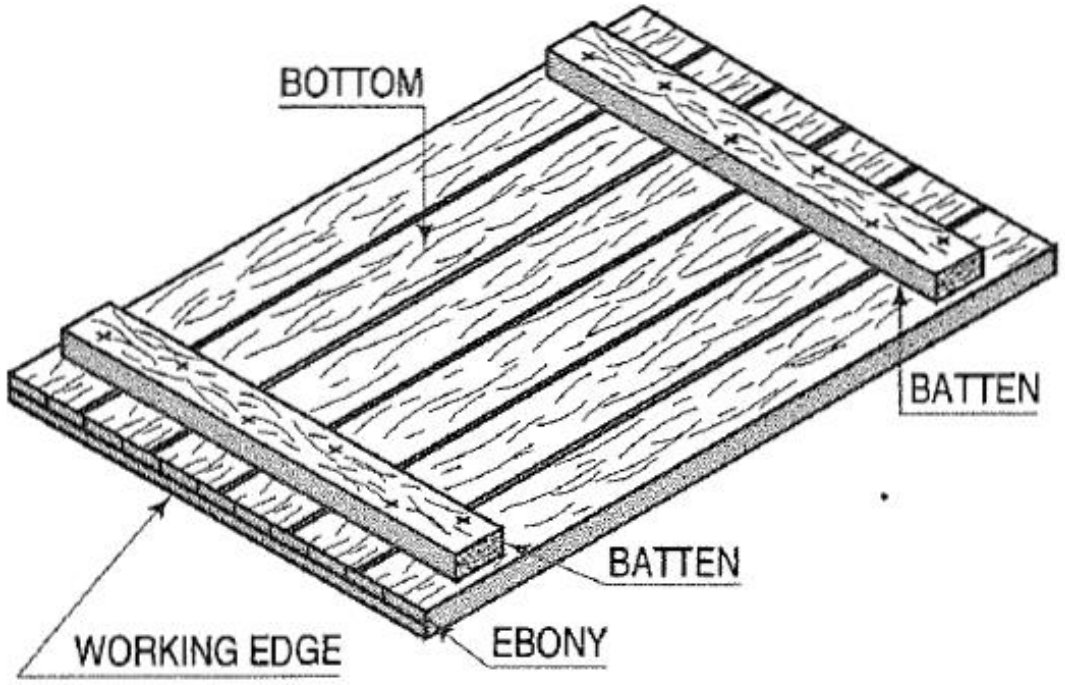
Basics

Topics covered in today's class

- Tools
- Basics of Engineering Drawing

Tools Required

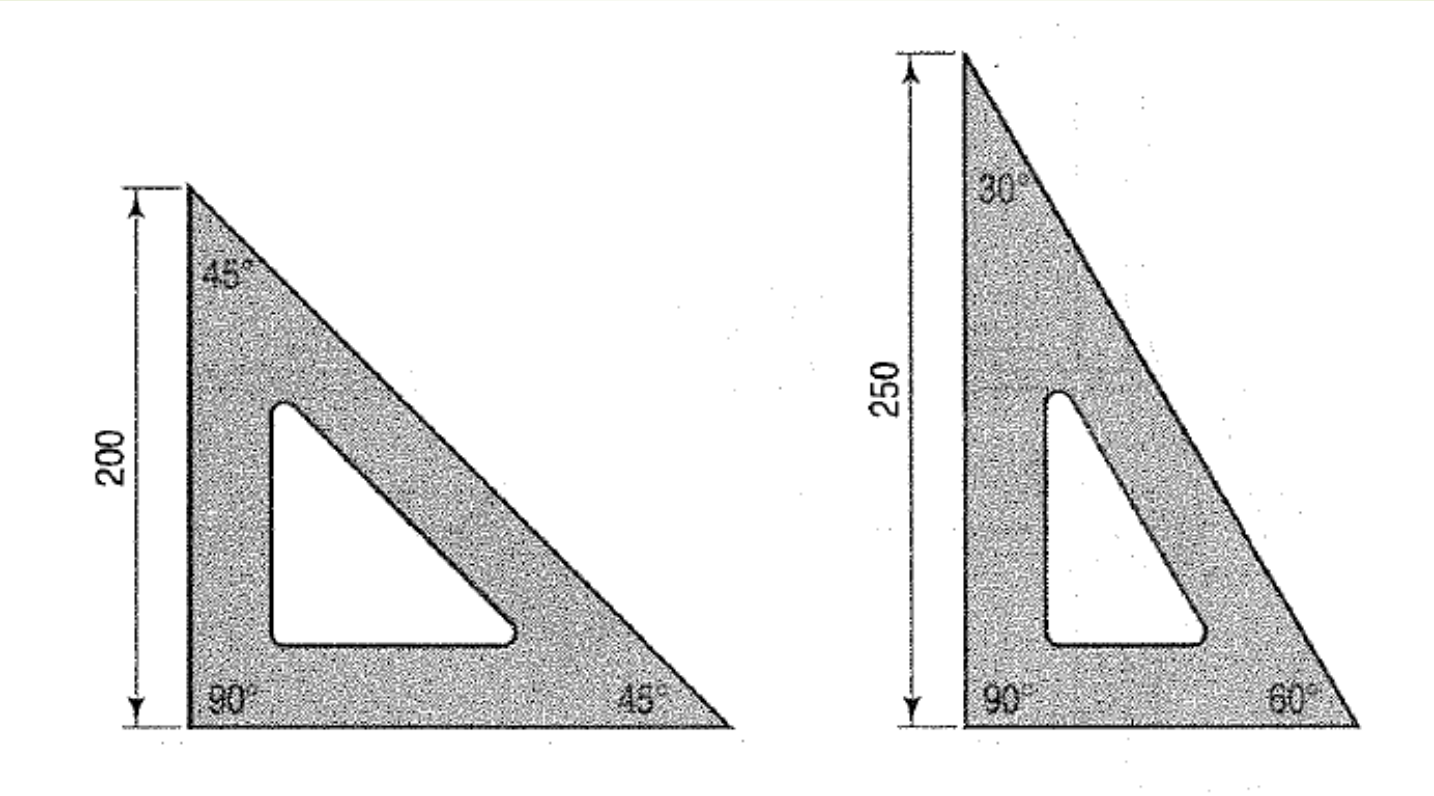
1. Drawing board
2. Set-squares - 45° and 30°- 60°
3. Compass
4. Scale
5. Protractor
6. Drawing papers
7. Drawing pencils
8. Eraser
9. Duster



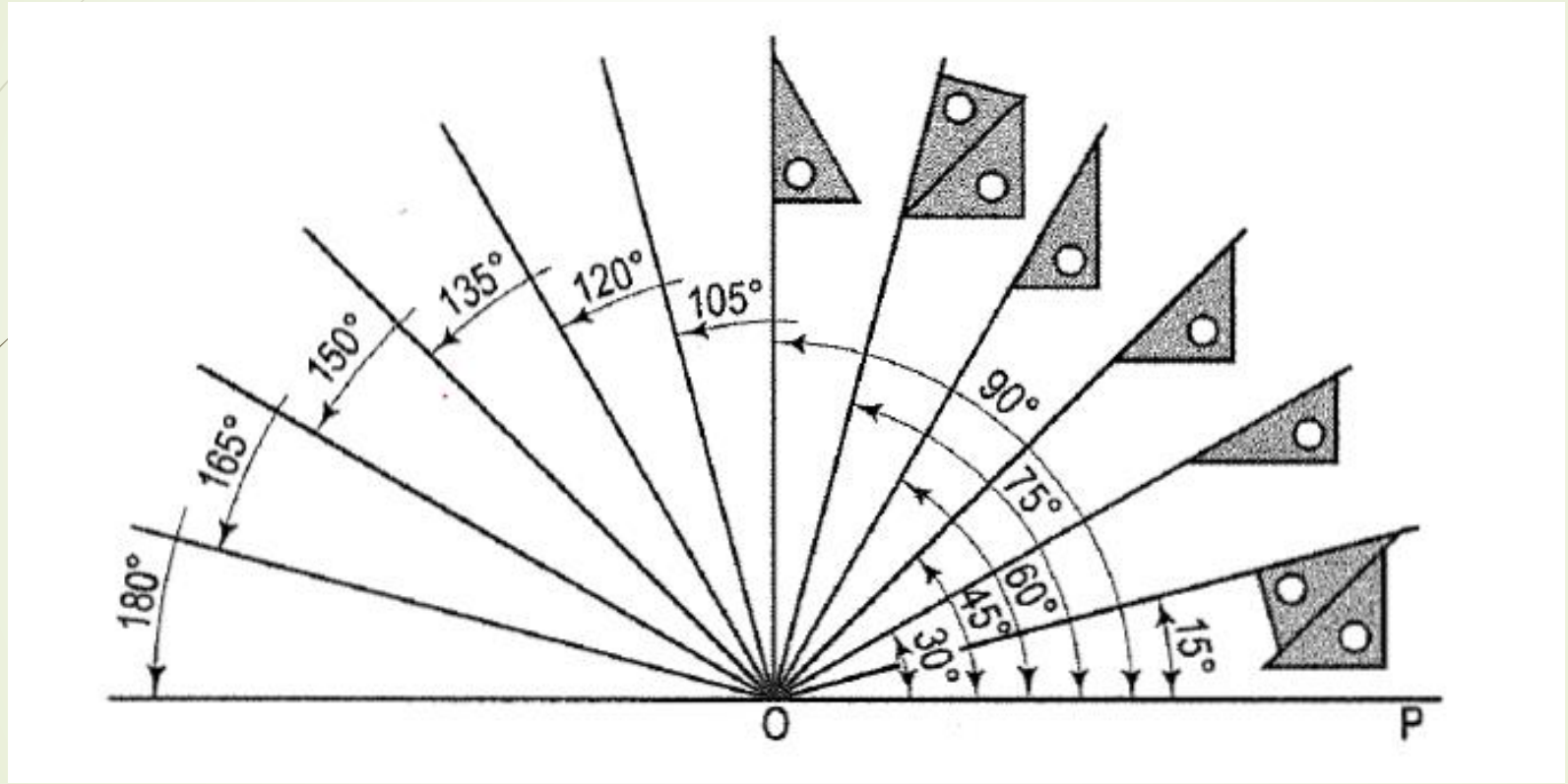
SIZES OF DRAWING BOARDS

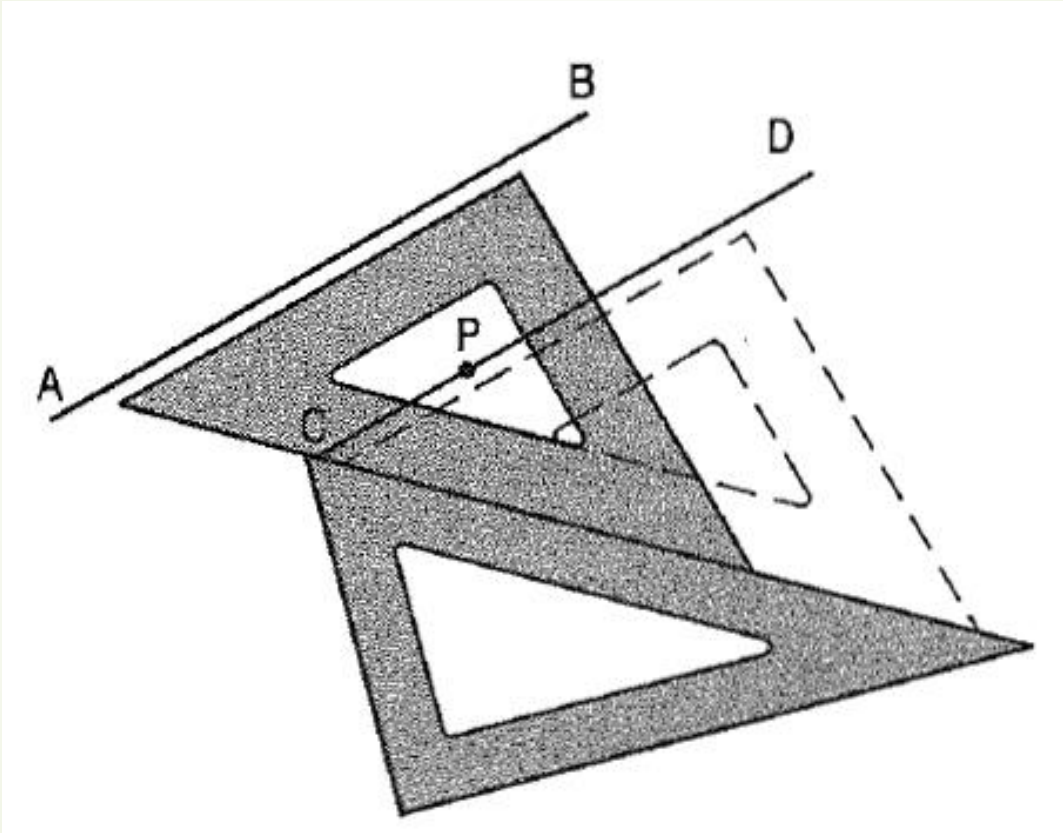
Designation	Size (mm)
B0	1000 × 1500
B1	700 × 1000
B2	500 × 700
B3	350 × 500

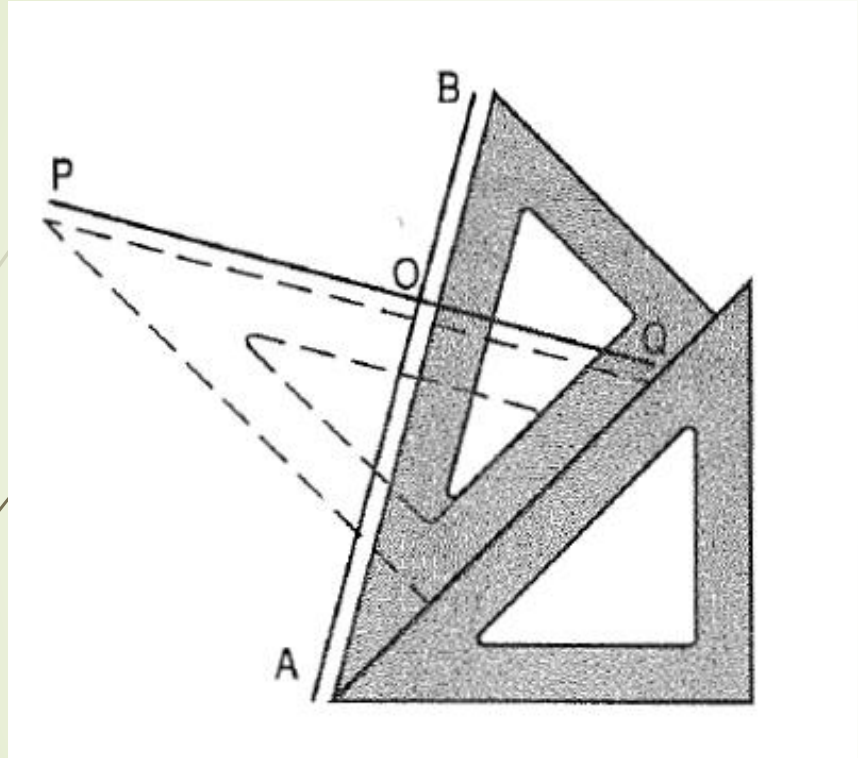
Drawing Board

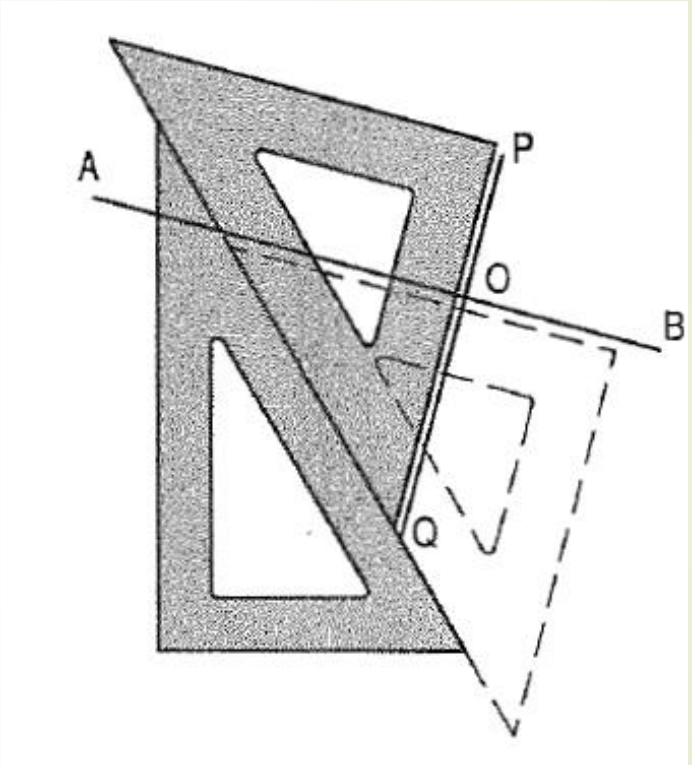


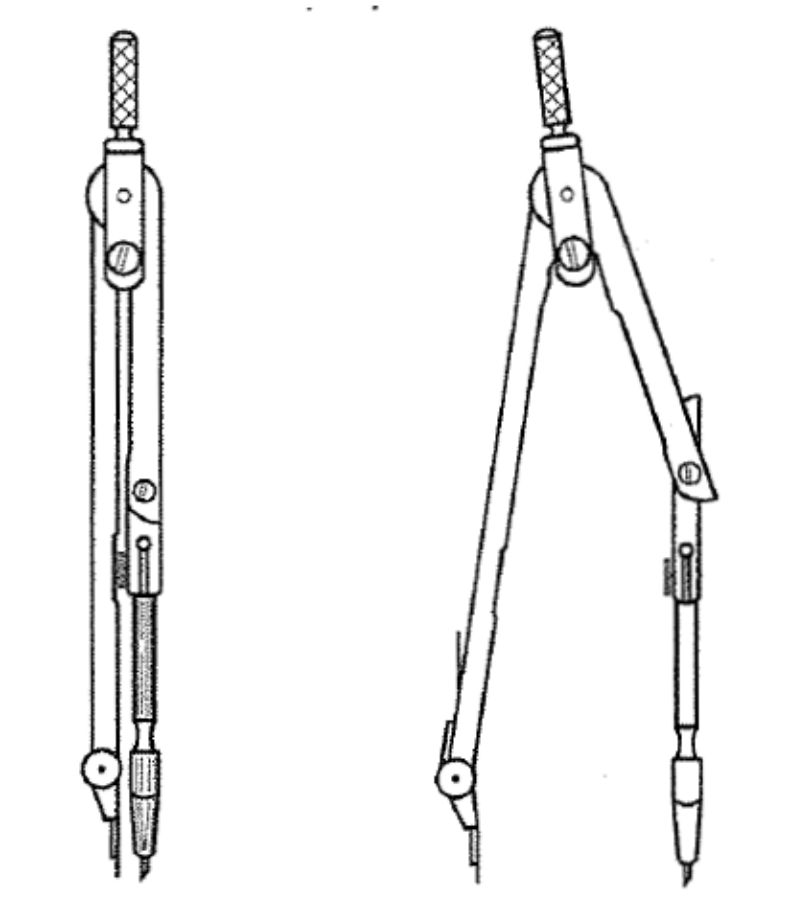
Set Squares

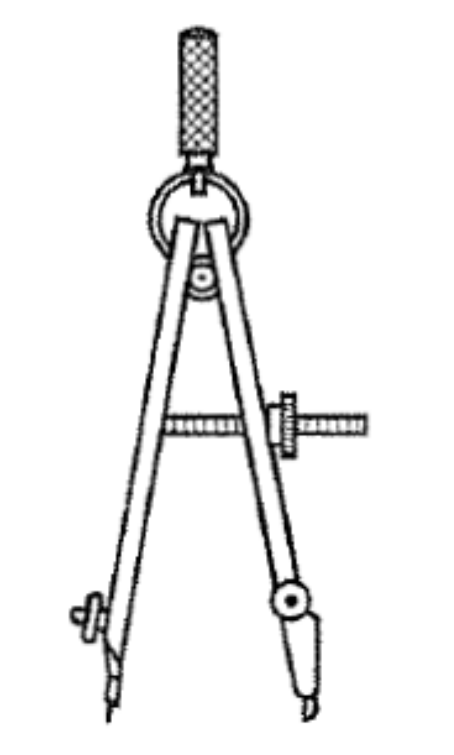

180°
165°
150°
135°
120°
105°
90°
75°
60°
45°
30°
15°
O
P


B
D
P
A
C

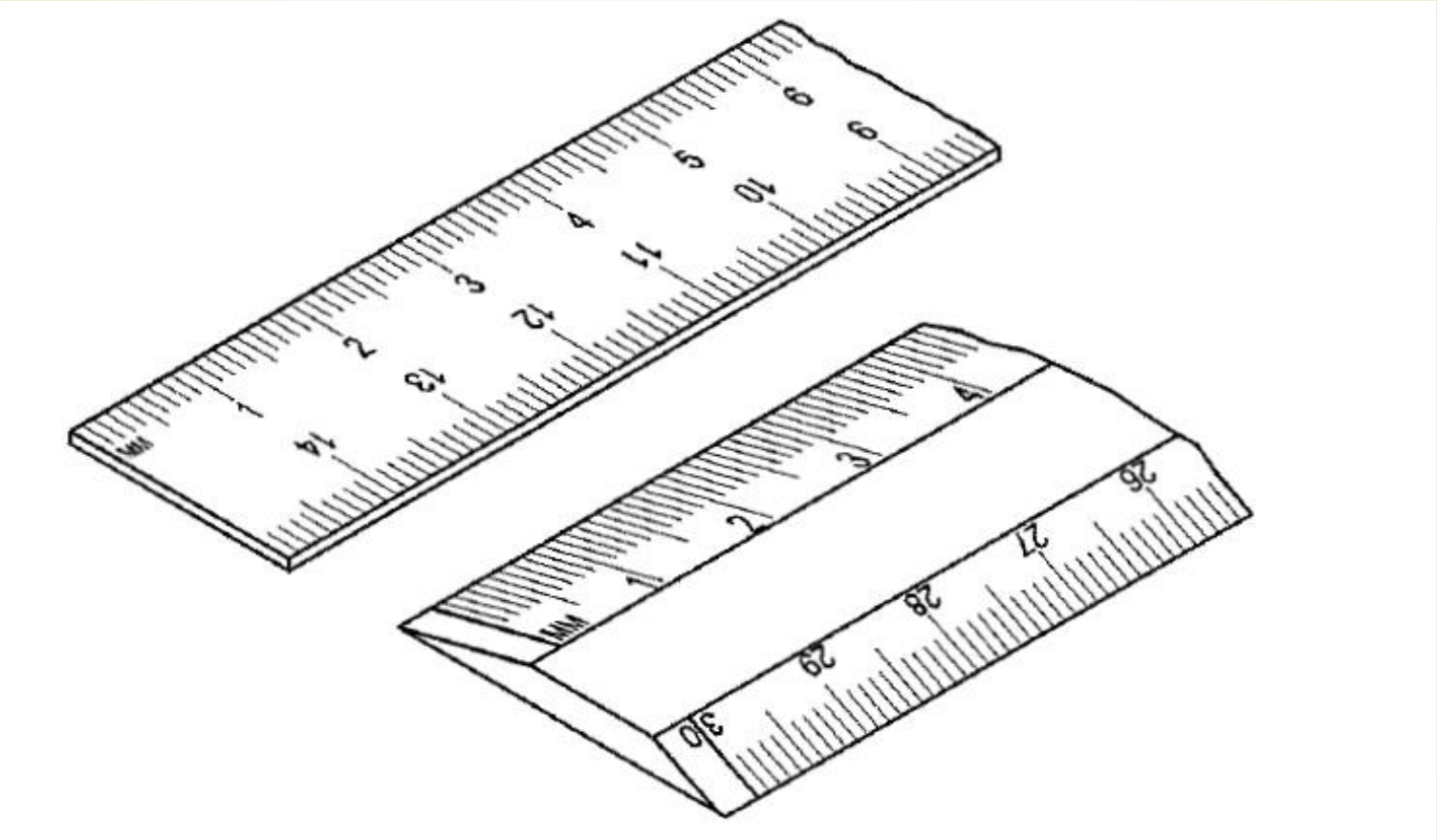

B
P
O
Q
A


A
P
O
B
Q

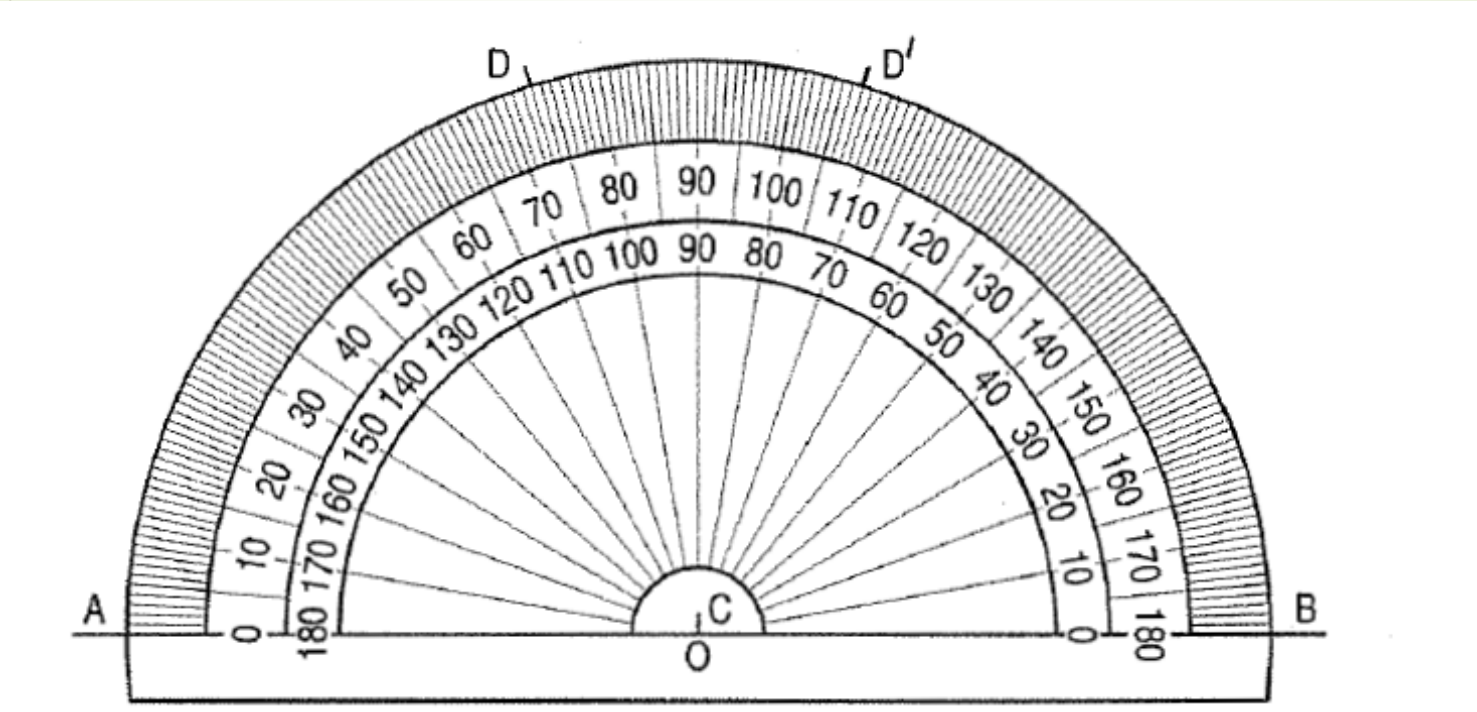




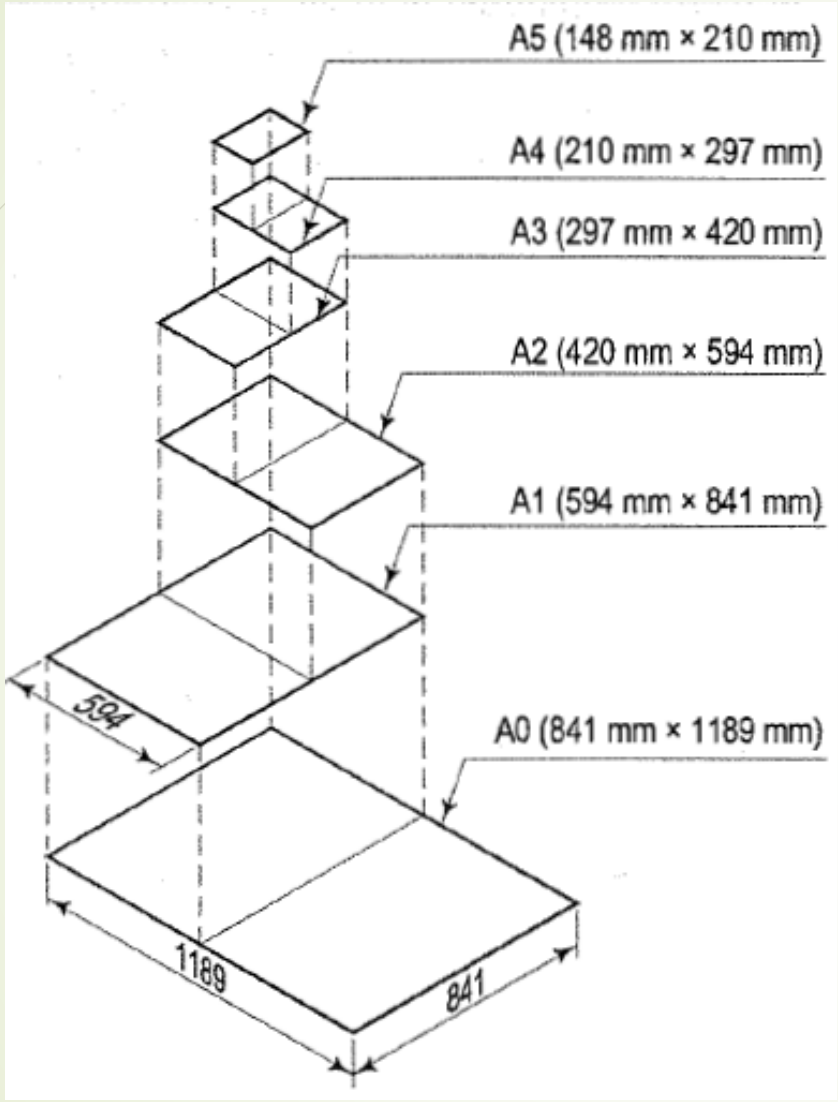
Compass



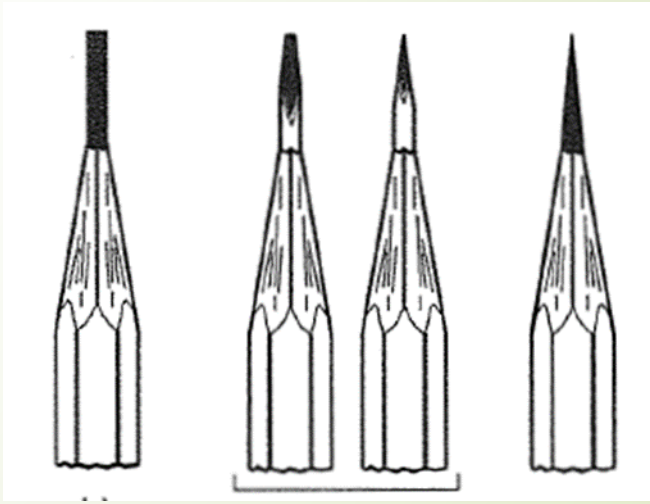
Scale


D
D'
A
B
C
O
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180

Protractor



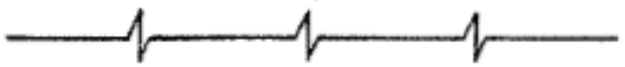
Drawing Papers



Pencil

Roll and Draw

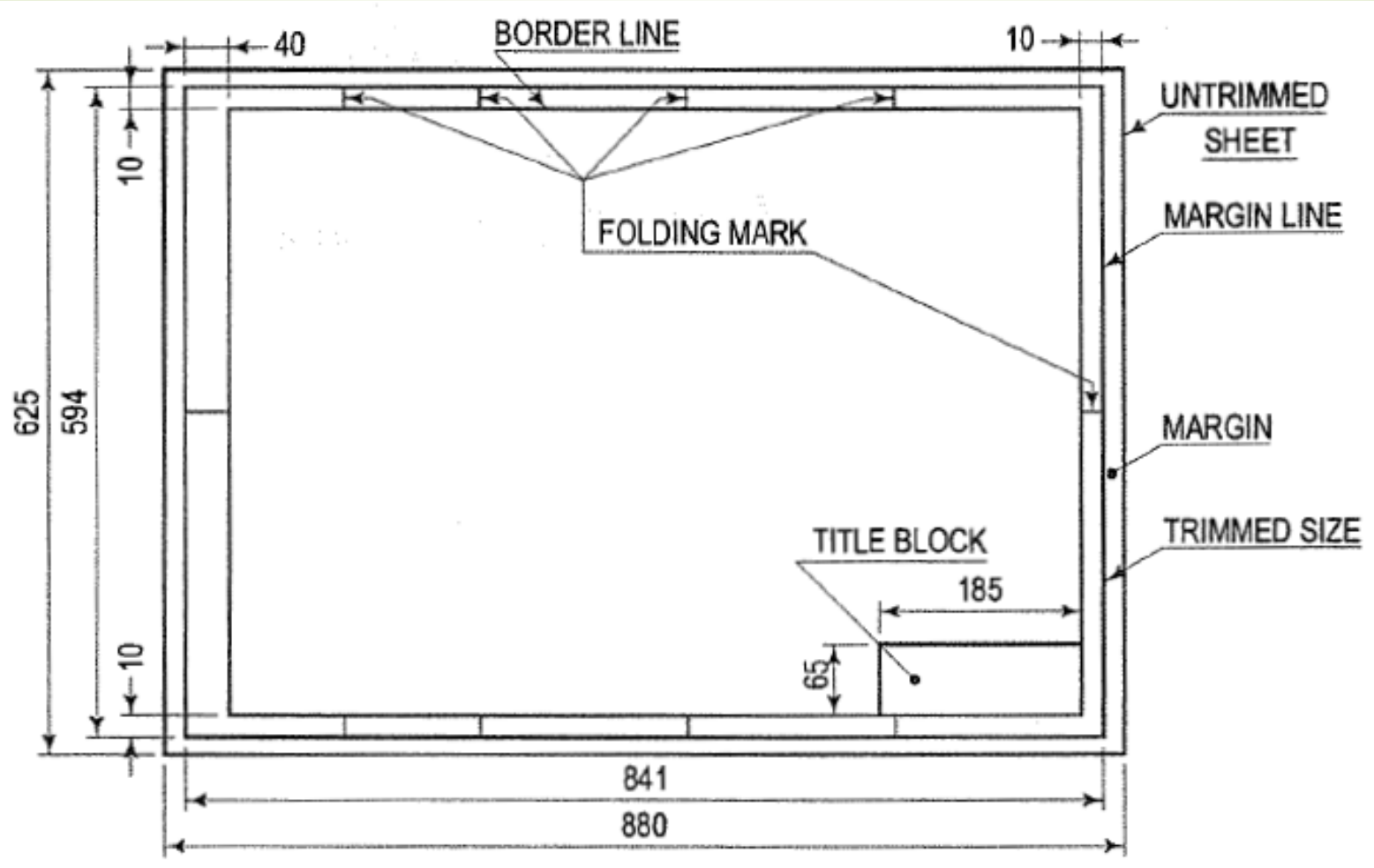
Types of lines:

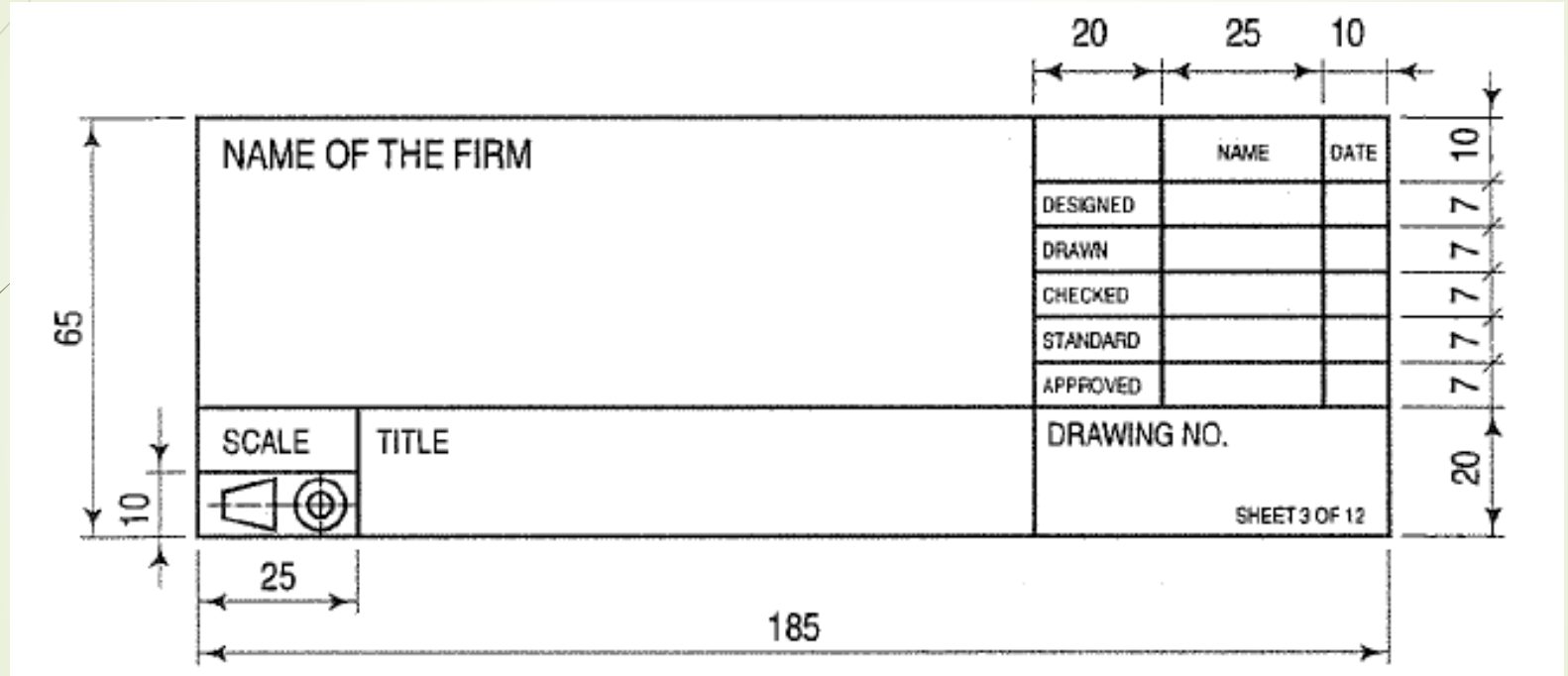
Line	Description	General applications
A 	Continuous thick or Continuous wide	Visible outlines, visible edges; crests of screw threads; limits of length of full deph thread,lines of cuts and section arrows; parting lines of moulds in views; main representations in diagrams, maps, flow charts; system lines(structural metal engg.)
B 	Continuous thin (narrow) (straight or curved)	Imaginary lines of intersection; grid, dimension, extension, projection, short centre, leader, reference lines; hatching; outlines of revolved sections; root of screw threads; interpretation lines of tapered features; framing of details; indication of repetitiv details;
C 	Continuous thin (narrow) freehand	Limits of partial or interrupted views and sections, if the limit is not a chain thin line
D 	Continuous thin (narrow) with zigzags (straight)	Long-break line

E	Dashed thick (wide)	Line showing permissible of surface treatment
F	Dashed thin (narrow)	Hidden outlines; hidden edges
G	Chain thin Long-dashed dotted (narrow)	Centre line; lines of symmetry; trajectories; pitch circle of gears, pitch circle of holes,
H THICK THIN THICK	Chain thin (narrow) with thick (wide) at the ends and at changing of position	Cutting planes
J	Chain thick or Long-dashed dotted (wide)	Indication of lines or surfaces to which a special requirement applies
K	Chain thin double-dashed or long-dashed double-dotted (narrow)	Outlines of adjacent parts Alternative and extreme positions of movable parts Centroidal lines Initial outlines prior to forming Parts situated in front of the cutting plane

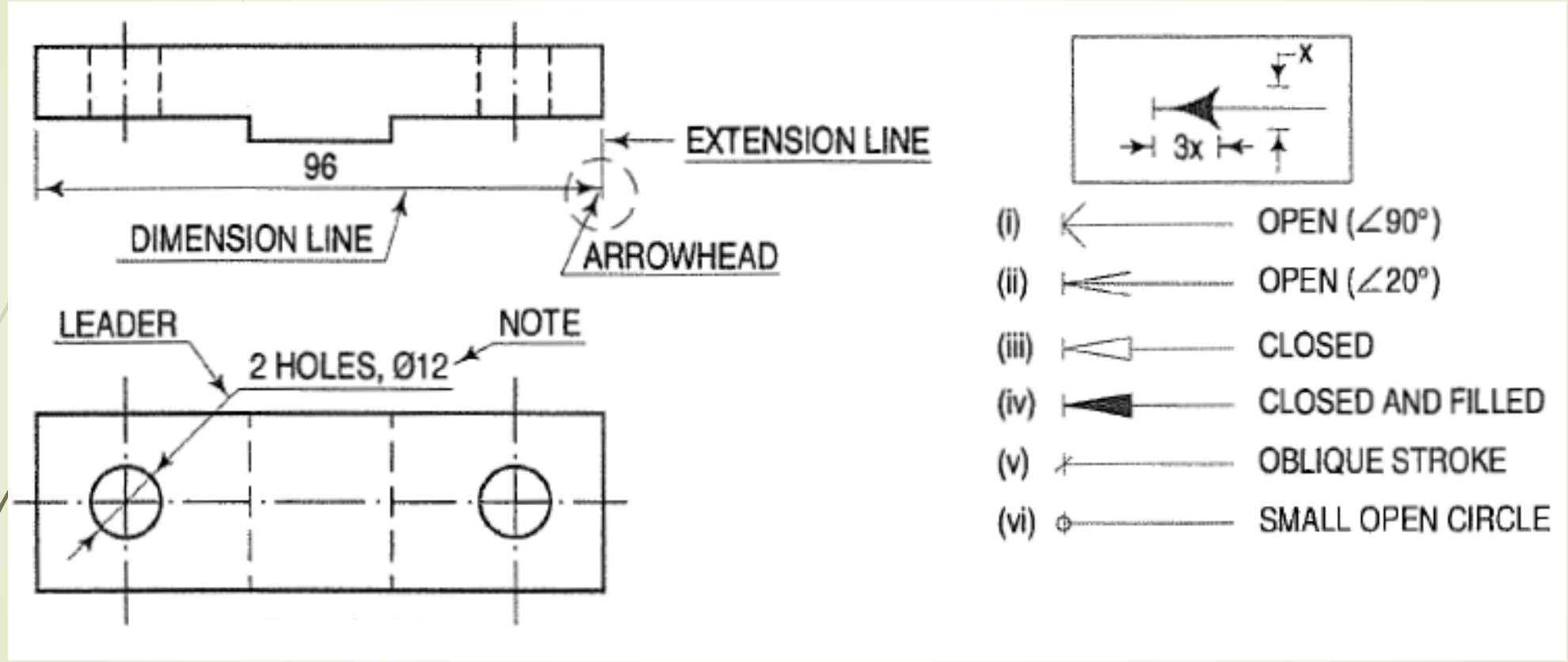
Sheet Layouts

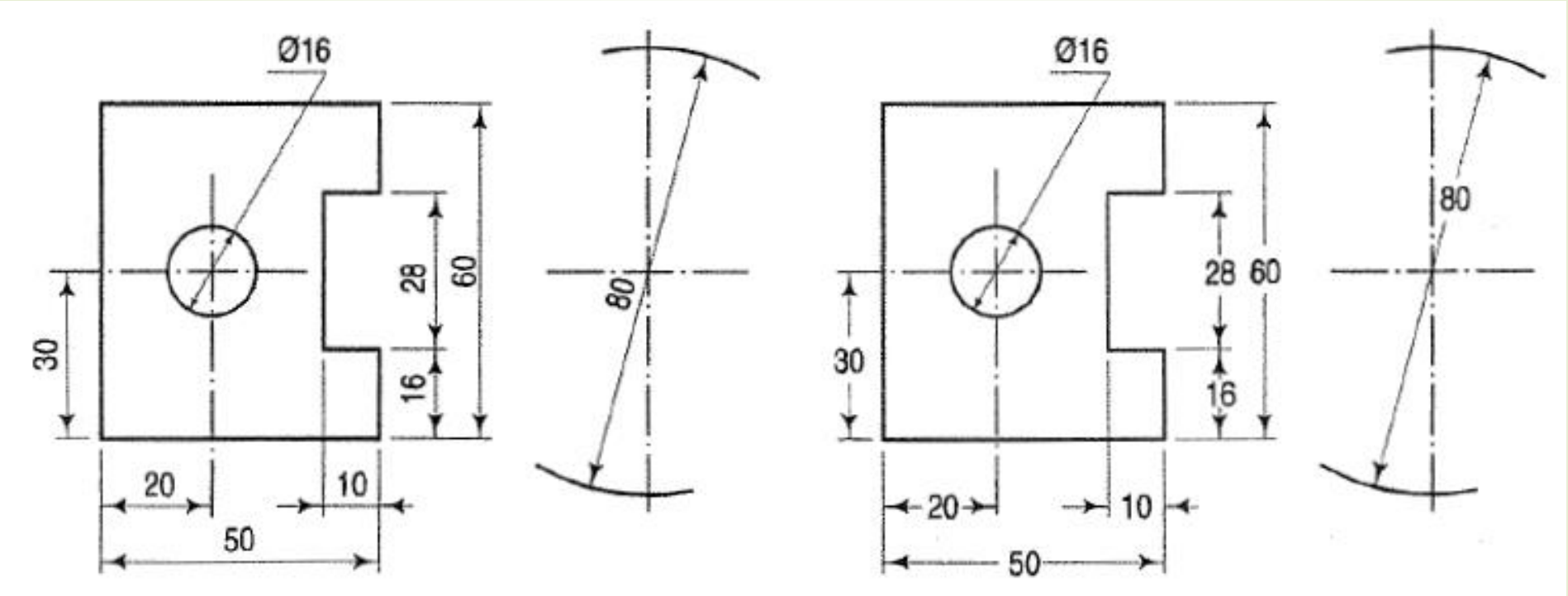
Sheet designation	Trimmed size (mm)	Untrimmed size (mm)
A0	841 × 1189	880 × 1230
A1	594 × 841	625 × 880
A2	420 × 594	450 × 625
A3	297 × 420	330 × 450
A4	210 × 297	240 × 330
A5	148 × 210	165 × 240


40
BORDER LINE
10
UNTRIMMED
SHEET
10
FOLDING MARK
MARGIN LINE
625
594
MARGIN
TRIMMED SIZE
TITLE BLOCK
185
65
10
841
880


20
25
10
NAME OF THE FIRM
NAME
DATE
DESIGNED
DRAWN
CHECKED
STANDARD
APPROVED
10
7
7
7
7
65
SCALE
TITLE
DRAWING NO.
SHEET 3 OF 12
20
10
25
185

Dimensioning.





Aligned System

Unidirectional System

Thank You