



Introduction

- Carry SB to lab - use question bank

classwork problems - system & QW
sketchbook problems
Practice problems

- Engineering drawing
- Solid Edge, Solid Works, auto CAD (only 2D)

TYPES OF LINES

use diff pencils
or pressure

H.no	Line Type	Use
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1. Continuous thick line  0.5mm Visible edge

2. Continuous thin line  0.13mm Projection line, dimension line, leader line, construction line

3. Dashed line  0.13 or 0.5 Hidden line

4. Thin chain line  0.13 mm Centre line, axis of symmetry

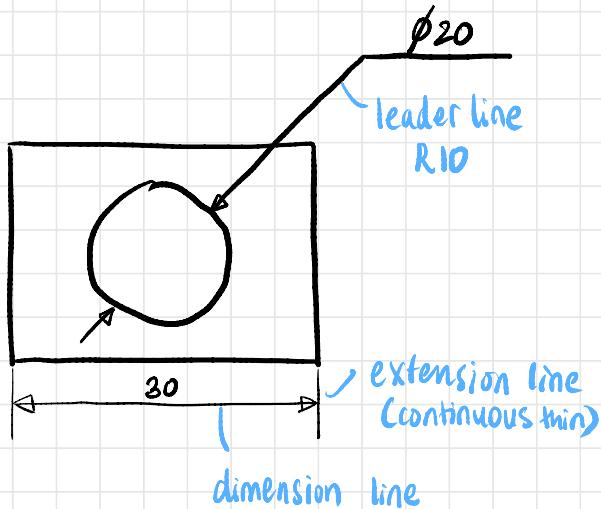
5. Thin chain with thick edges  Used as cutting edges or planes

Example

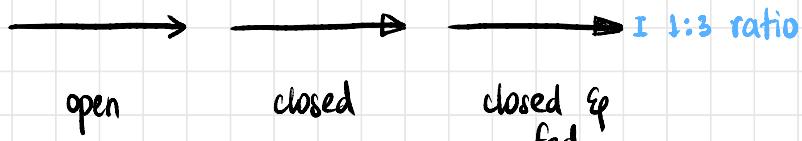
* use tool box

* use scale

lettering: 2 line practice



- pencil : 2H or HB , properly sharpened
- arrowheads : three different types (for angles also)



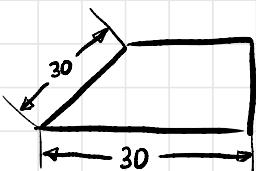
Dimensioning Practice

There are 2 different kinds of dimensioning

1) Aligned type of dimensioning

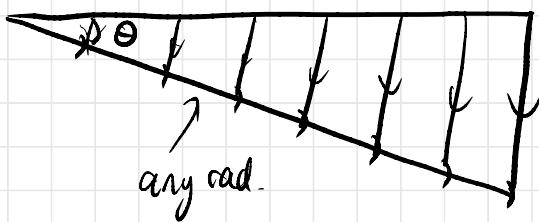


2) Unidirectional



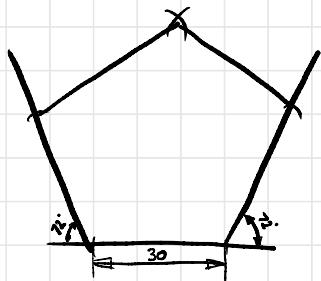
CONSTRUCTIONS

1) Divide a line into equal number of parts

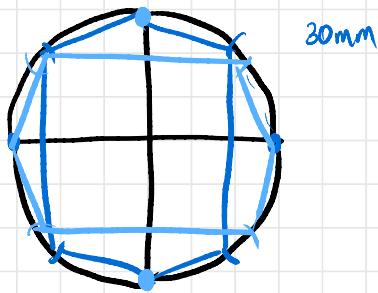


2) Regular polygons

(a) Regular pentagon 30mm



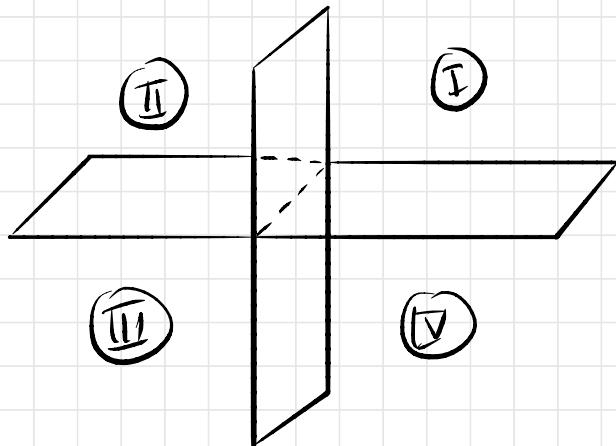
(b) Hexagon - circle method 30mm



Orthographic Projections

- light source at ∞
- perpendicular to plane of projection
- light rays (incoming) are parallel
- always use orthographic projection for true lengths

Methods of projection



Front view - vertical plane (FV - VP)

Top view - horizontal plane (TV - NP)

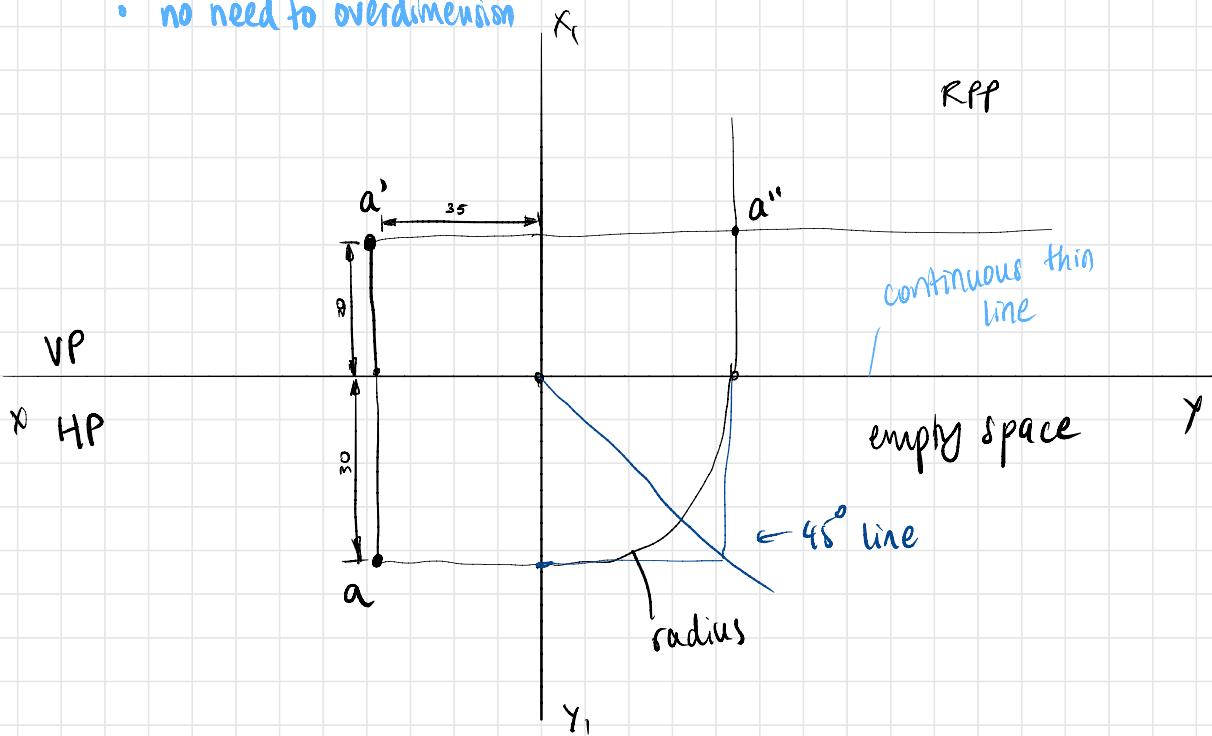
Side view - profile plane (SV - PP)

- 1) First angle method of projection
- 2) Second
- 3) Third
- 4) Fourth

First angle

Q1. Draw projection of point A 20mm above HP and 30mm in front of VP and 35mm in front of RPP

- except points, all are thin
- draw x-y line to divide sheet into HP and VP
- x-y is line of intersection of VP and RPP
- FV - a', TV - a, SV - a''
- no need to overdimension

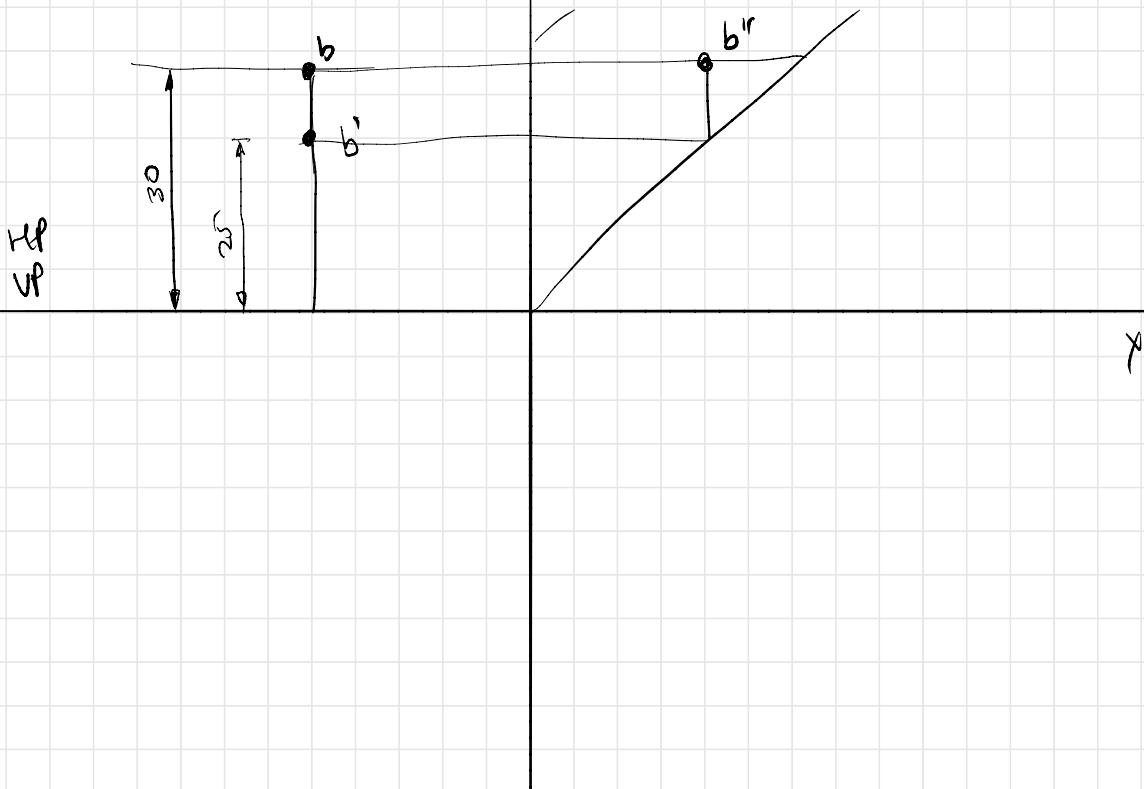


second angle

O2. Point B 30 mm behind VP and 25 mm above HP. Draw the projections of a point

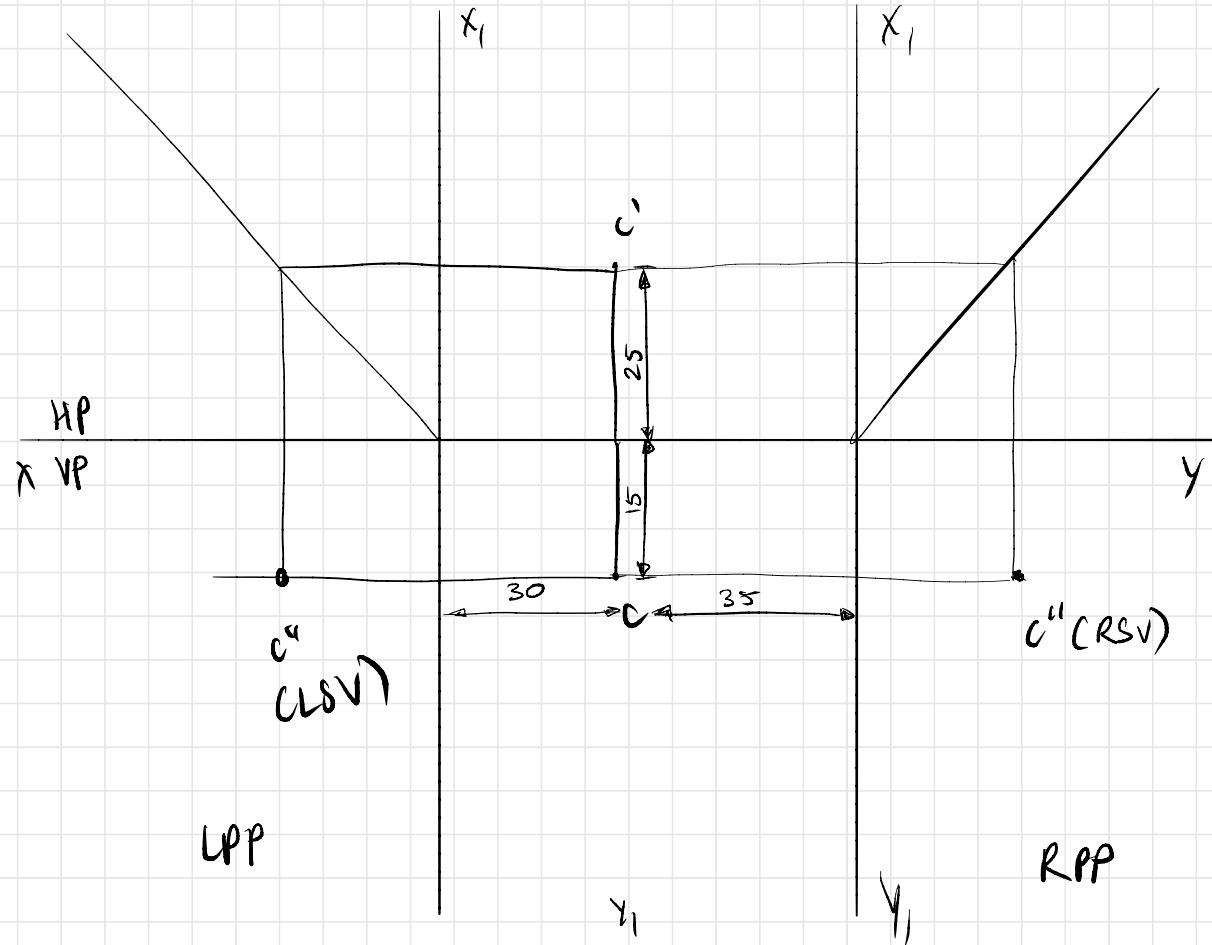
- don't change rotation direction
- prefer not to use 2nd and 4th angles

sometimes 0.25 mm but in book 0.13 mm



Third angle

- Q3. Point C is 15 mm below HP and 25 mm behind VP
 and 30 mm behind LPP and 35 mm behind RPP.
 Draw projections of point C.

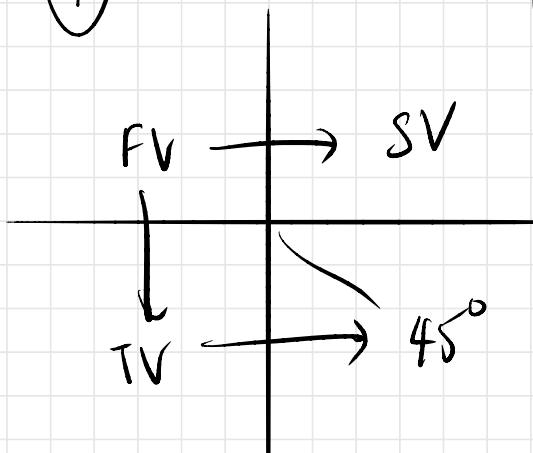


all dimensions
are in mm and
degrees.

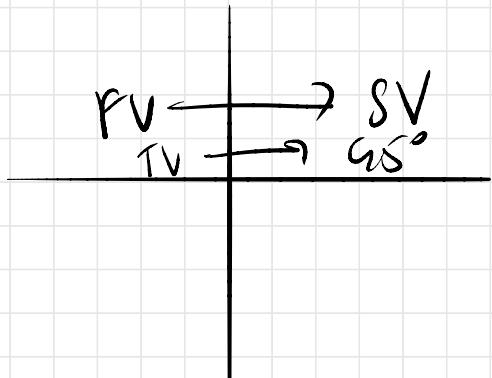
Note: In first angle method, object is in between observer and the plane of projection because of which the left side view of the object is projected on RPP and right side view of object projected on LPP.

In 3rd angle, POP is b/w obs & obj. Hence, left side view of an object is projected on LPP only and similarly, right side view is projected back and drawn on RPP only.

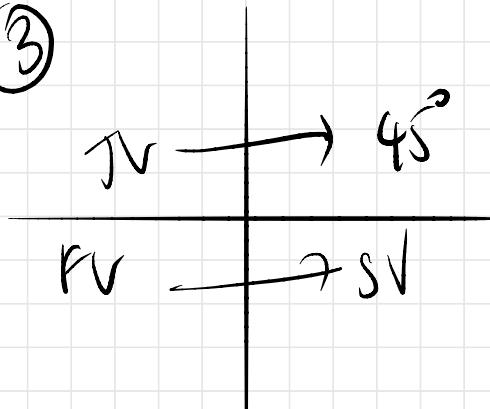
(1)



(2)



(3)



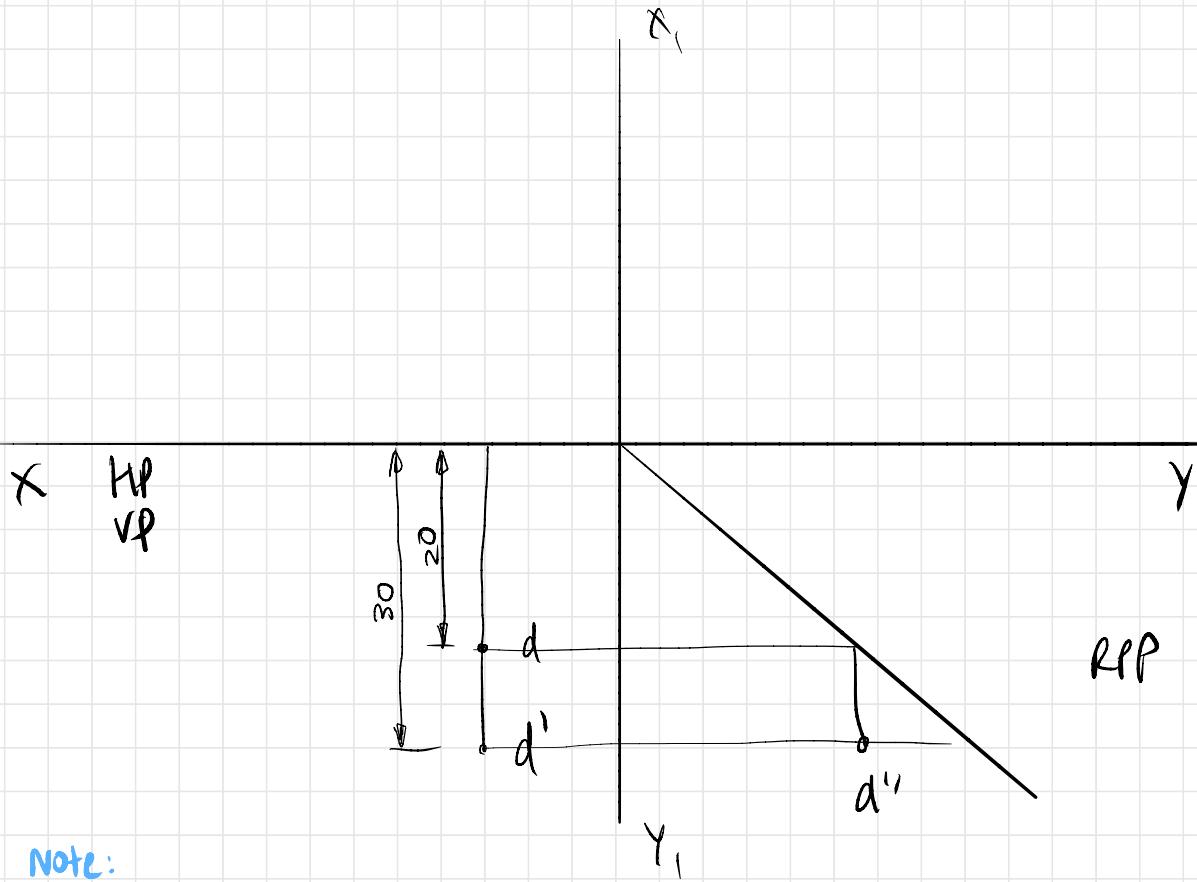
$$fV = a'$$

$$fV = a$$

$$sv = a''$$

Fourth angle

Q4. Point D is 20mm in front of VP and 30mm below HP. Draw projections of point d



Note:

The distances measured from HP will give us the distance to be measured in the VP (front view)

