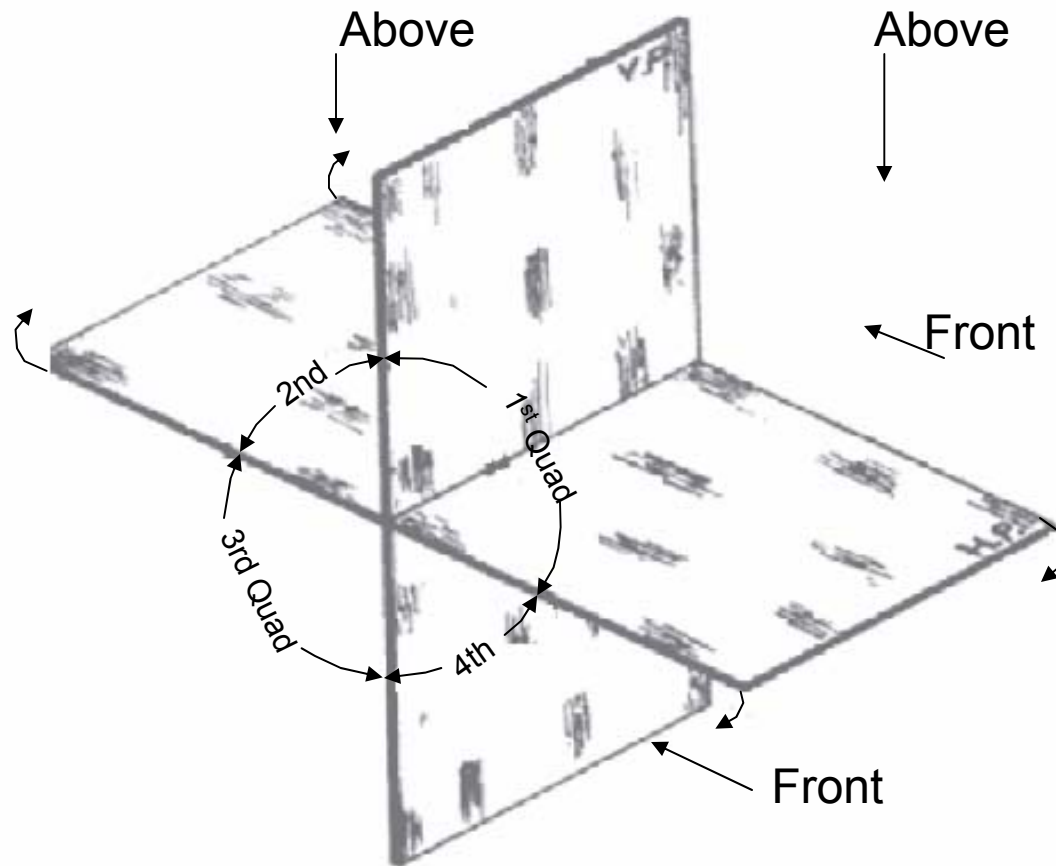


TA 101

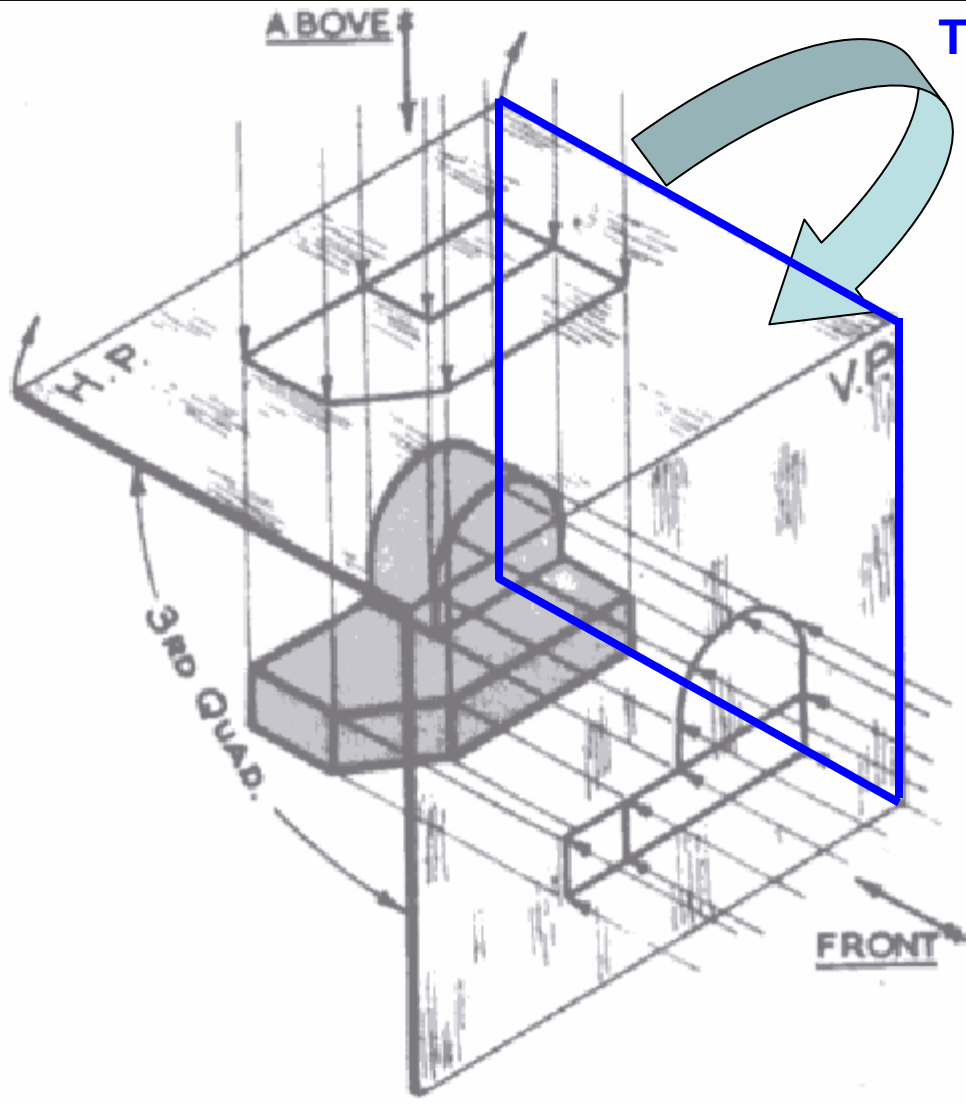
Lecture – 4

<http://home.iitk.ac.in/~mukesh/>



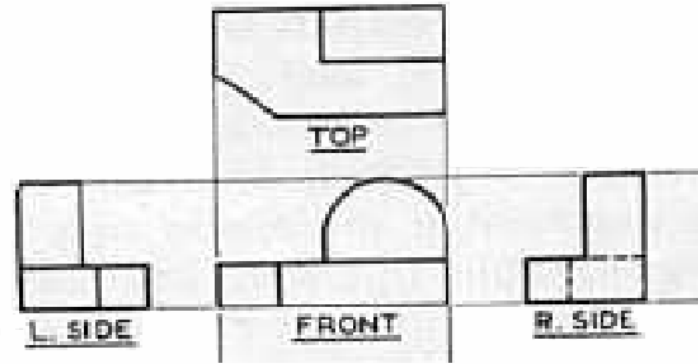
- Quadrant 1 and Quadrant 3 are Used for Orthographic Projections
- In whatever Quadrant the object is in, viewing directions are same
- In what quadrant, so far, we have been keeping the object in?

Revisit 3rd Angle Projection Scheme



This is Profile Plane

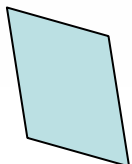
Here too
Observer - Plane - Object



RECAP of Concept



Object -

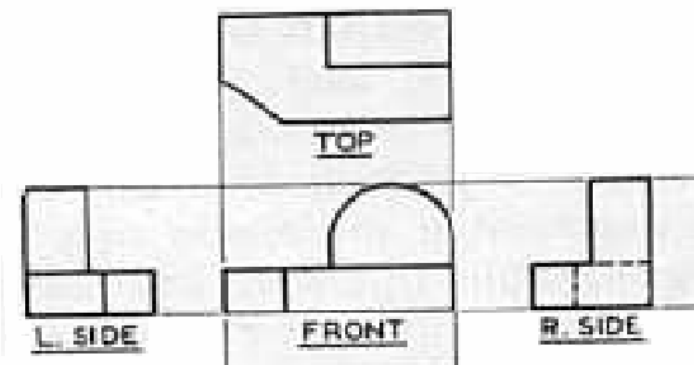
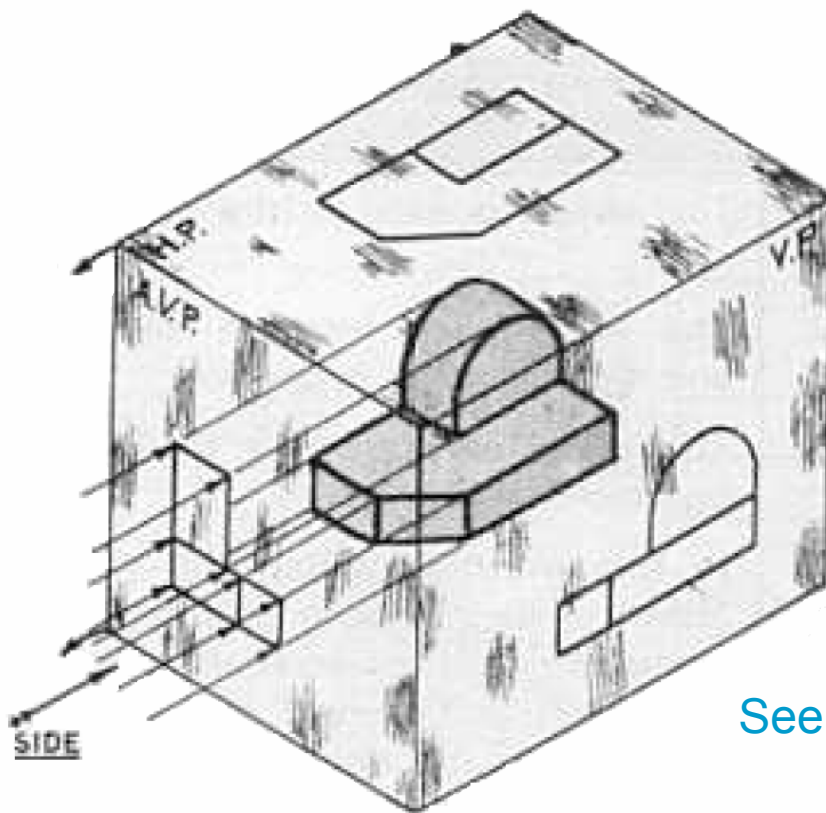


Plane -



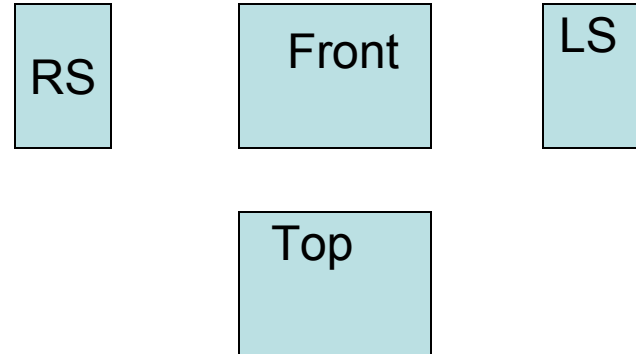
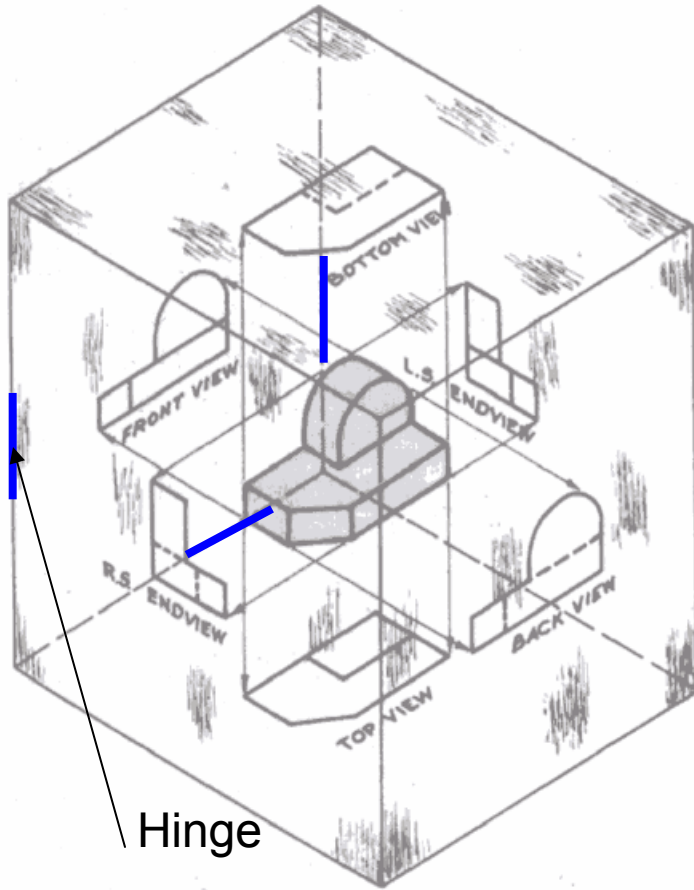
Observer

3rd Angle Projection Scheme contd..



See the positions of Front, top, RS, LS Views

1st Angle Projection Scheme



- See the positions of Front, top, RS, LS Views
- Examine how different these are from 3rd angle projection
- And why?

Recap the Concept



Plane -

Object -

Observer

Concept

In 3rd angle Projection

Observer – Plane - Object

Position wrt Front view;

top view is above, R-S View on right and L-S view on left

In 1st angle projection

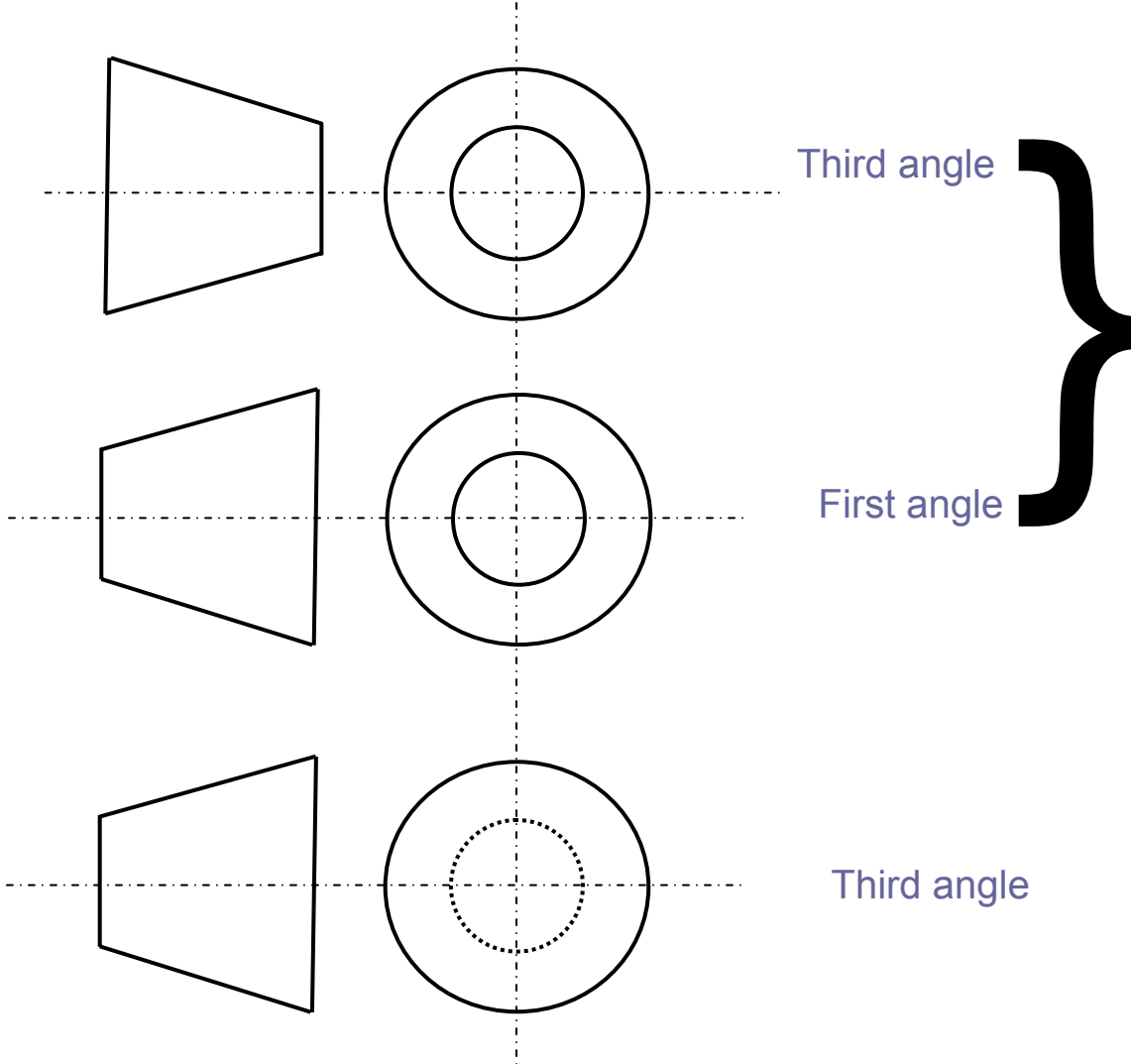
Observer – Object - Plane

Position wrt Front view;

top view is below, R-S View on left and L-S view on right

Quiz

Identify the angle of projection



Drawn in Title Block to
indicate type of
projection.

Theory of Dimensioning -Techniques and Conventions

Object is made of several parts – Need

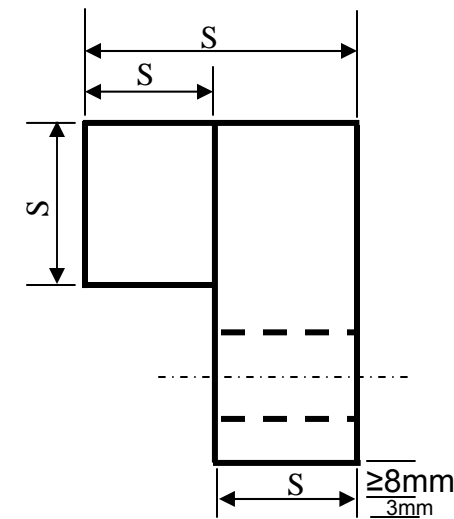
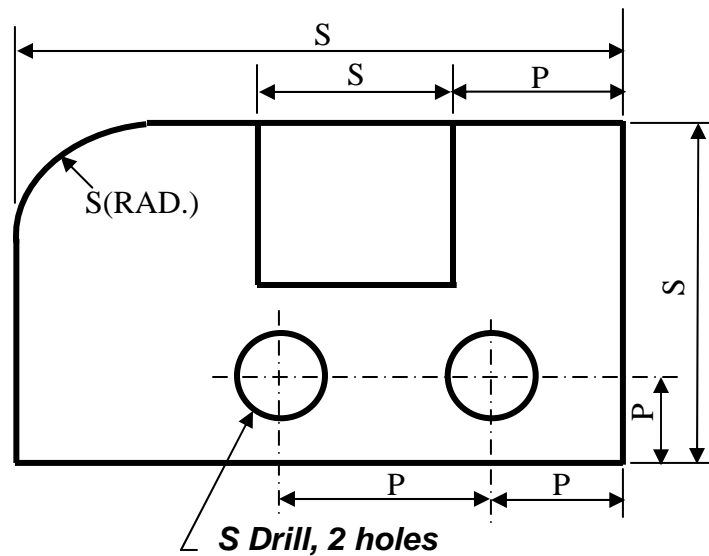
- Position (P)**
- Size (S)**
- Each feature is dimensioned once**
- For each feature, dimension positioned where its shape shows**
- No Redundancy**

Extension Lines

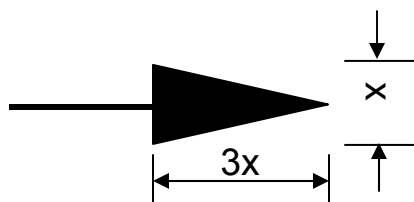
Dimension Lines

Arc and Circular Features

S: Size
P: Position



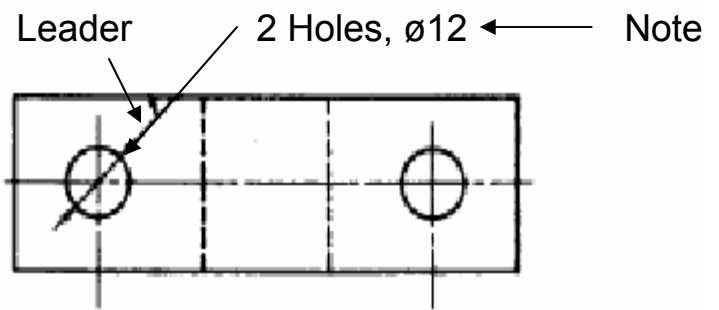
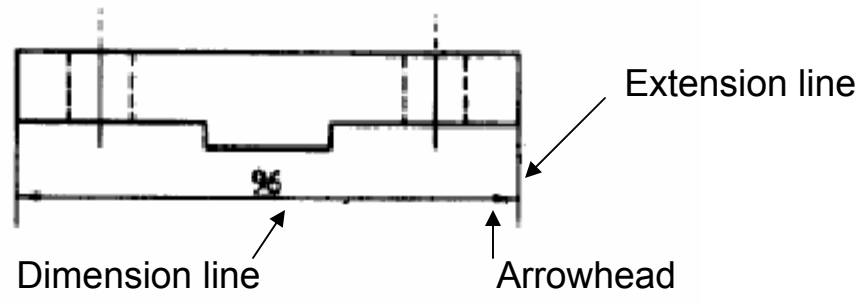
Arrow Dimensions

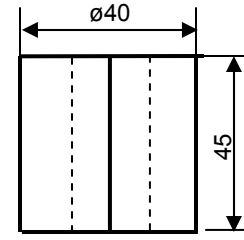
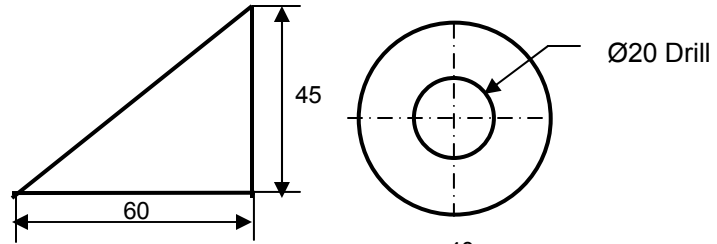


x=1mm usually

ALL DIMENSIONS IN MM
(Near Title Block)

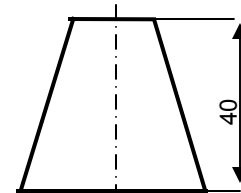
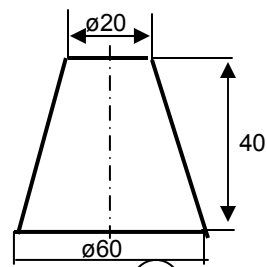
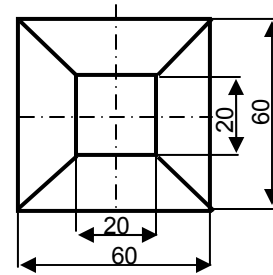
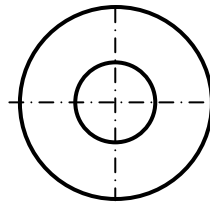
- Avoid giving any dimensions inside the drawing.
- No two dimension lines cross each other.
- Center line can be used as extension line.





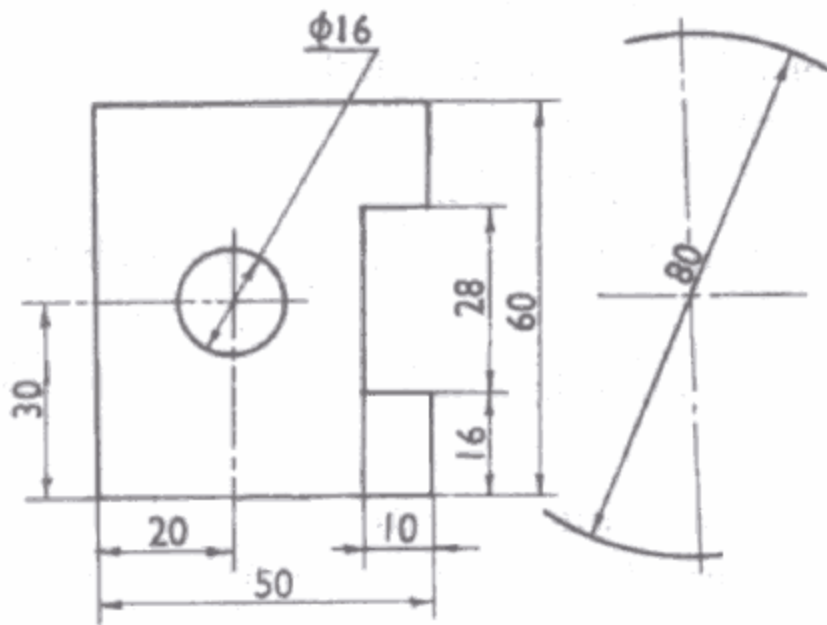
(A)

(B)



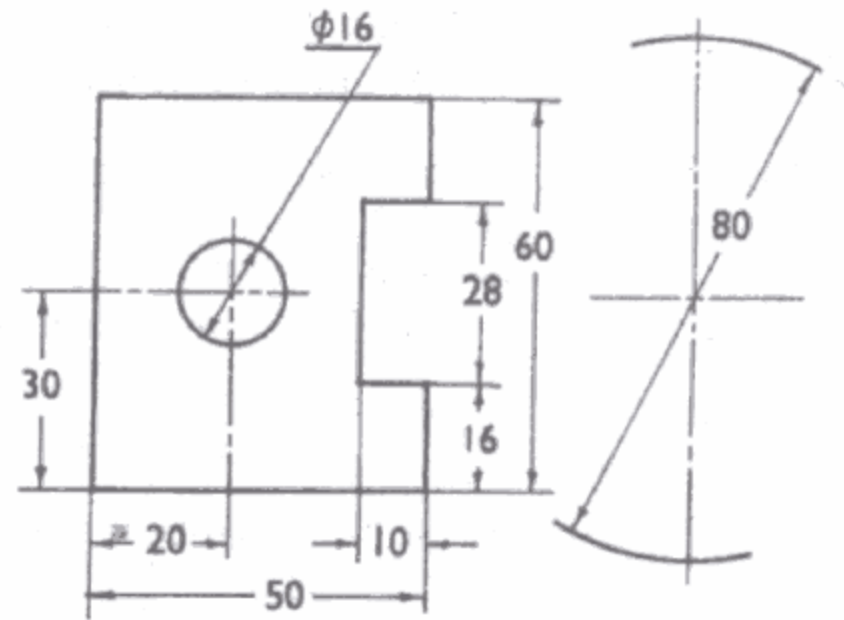
(C)

(D)



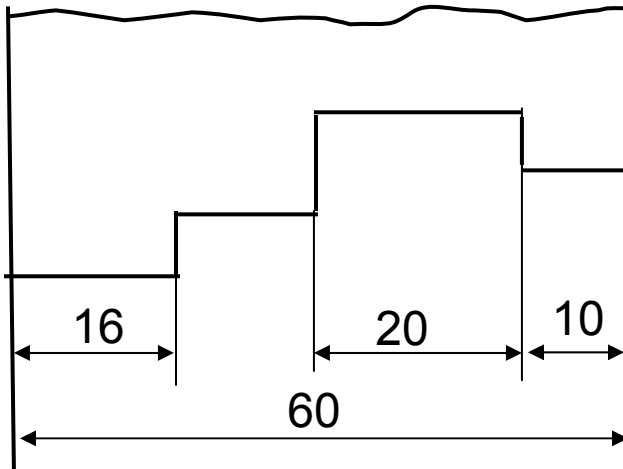
Aligned System

values read from bottom and Right side

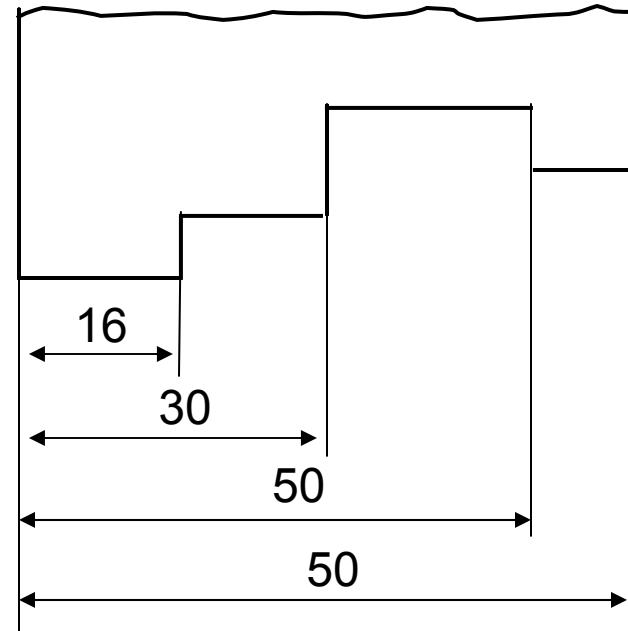


Unidirectional System

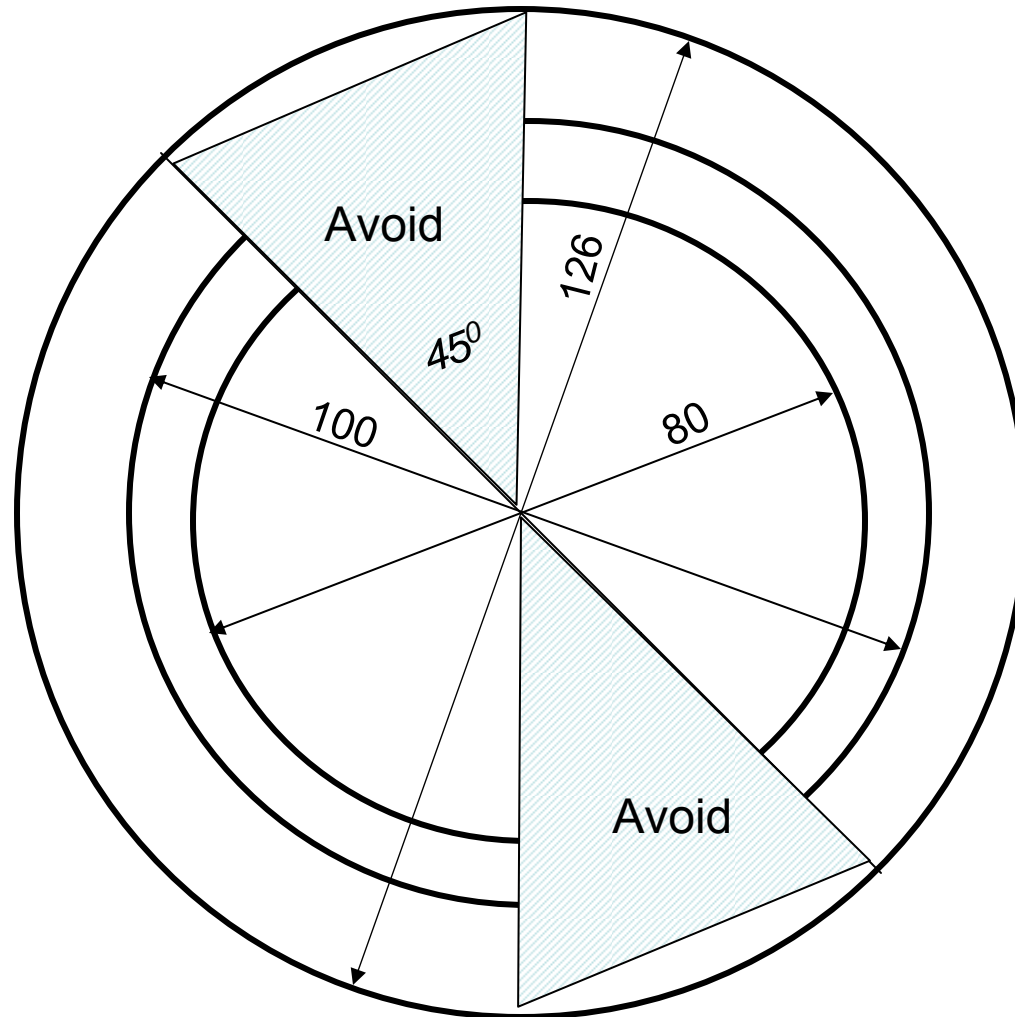
values read from bottom only
(Preferred when?)



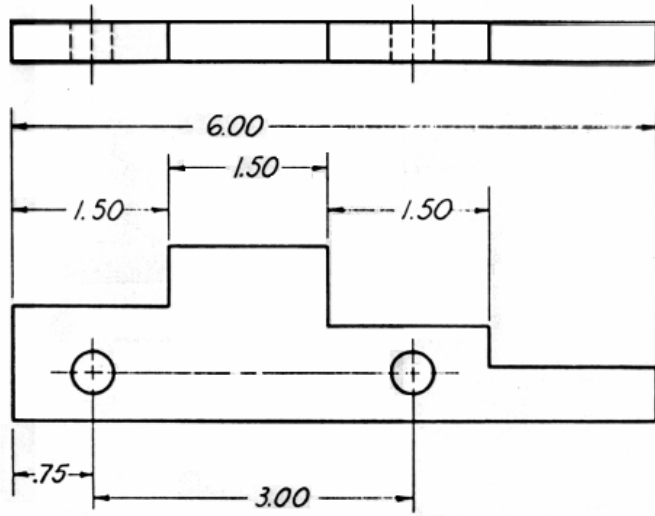
Continuous or Chain Dimensioning



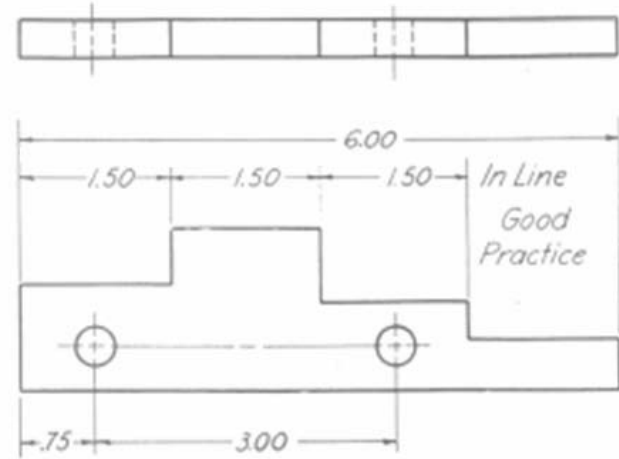
Progressive or Parallel Dimensioning
- From Common Base (Preferred)



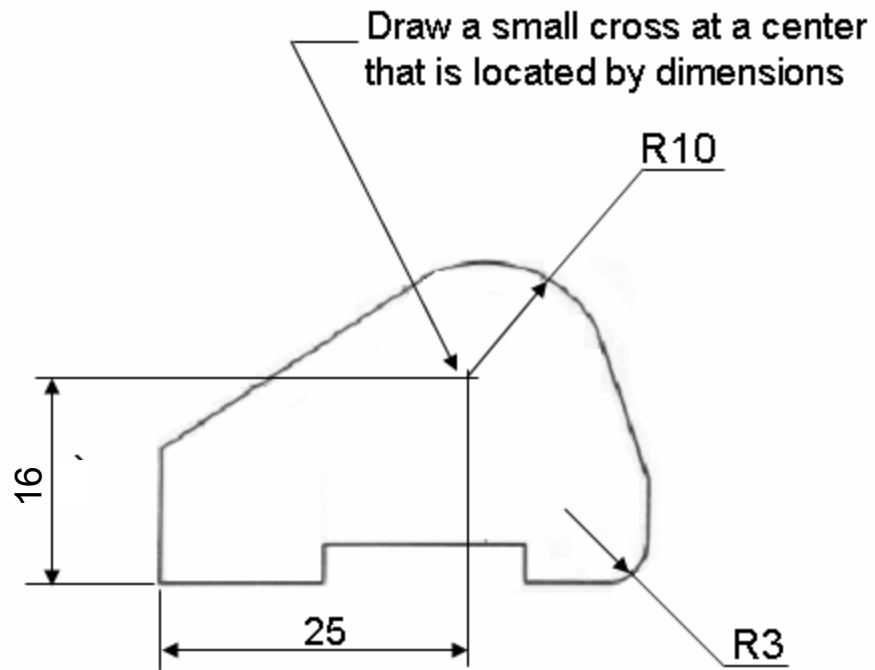
Areas to avoid – Place them so to read conveniently



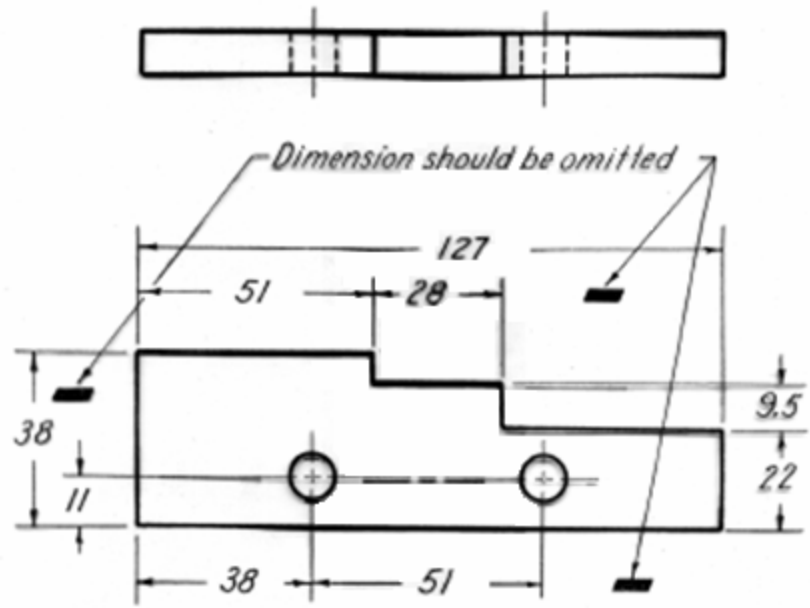
INCORRECT



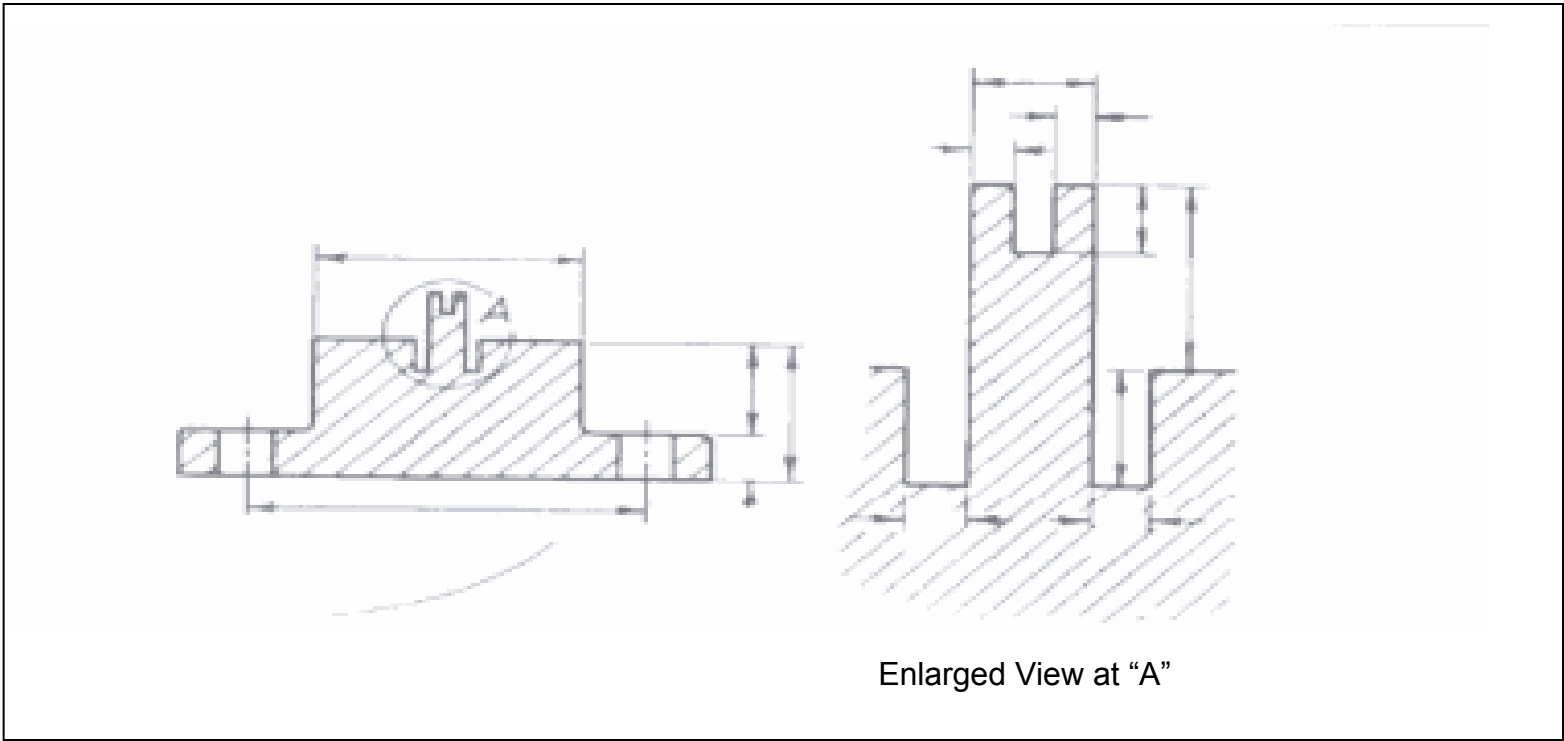
CORRECT



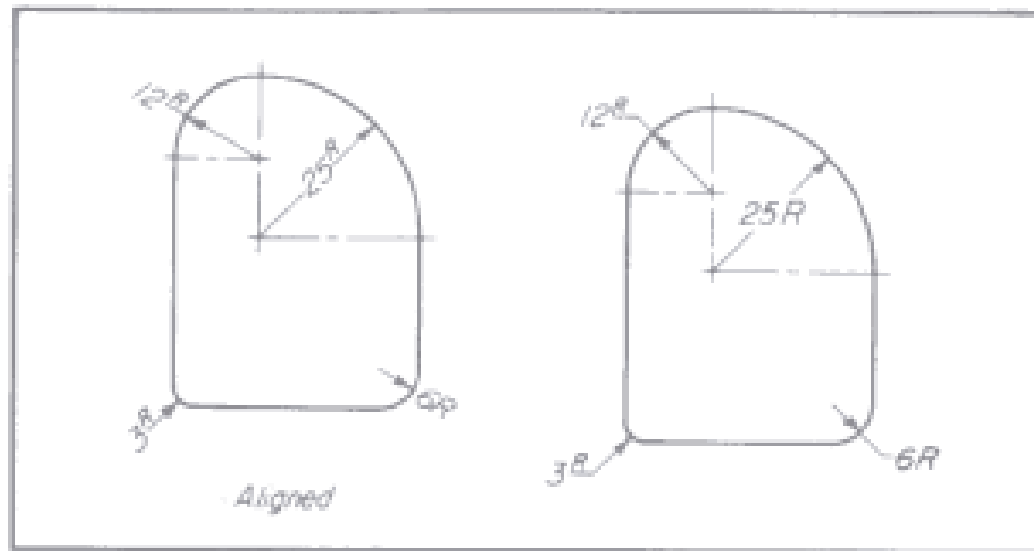
Dimensioning a circular arc.



Omit unnecessary dimensions.

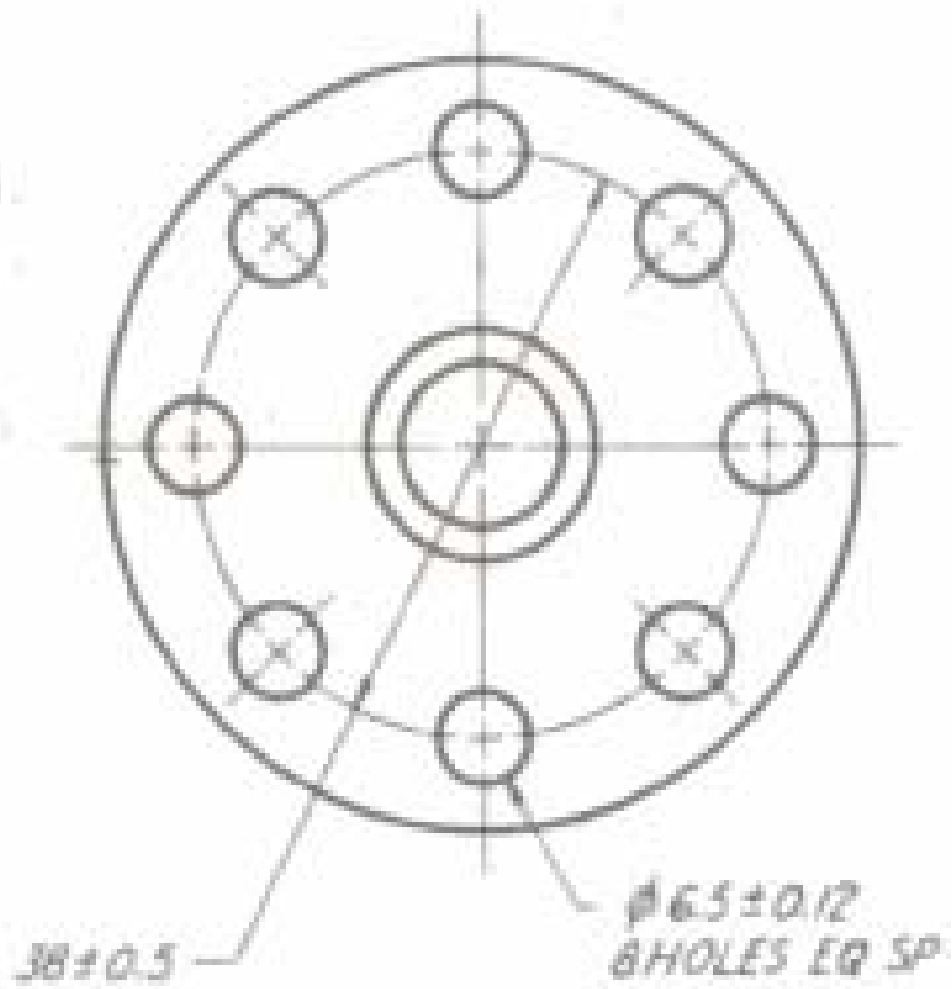


Use of enlarged view to clarify dimensions.

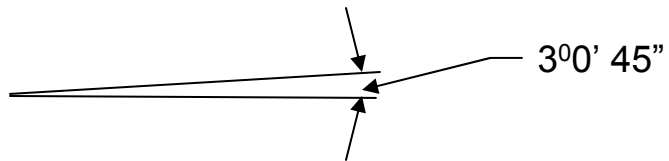
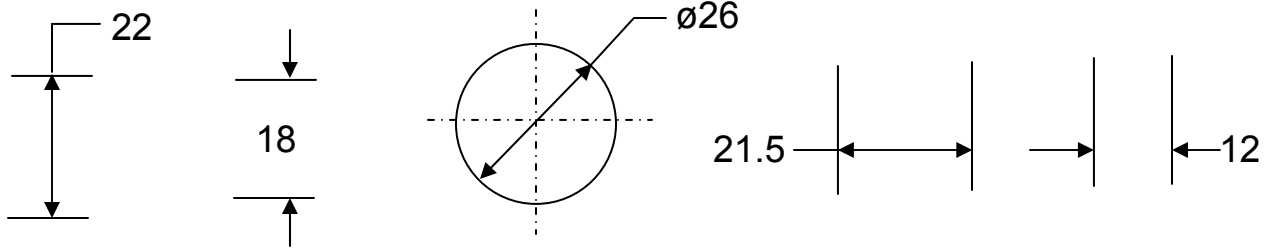
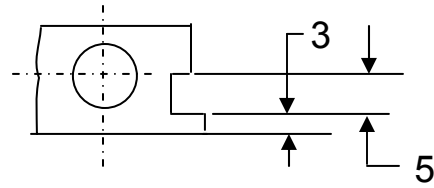
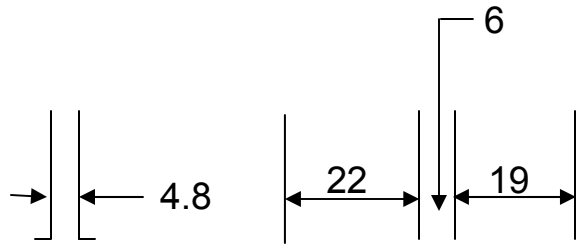


Dimensioning of arcs

Single arrow, inclined, show where true shape



Equally spaced holes.



Dimensioning in limited spaces