Case-II Line is Inclined to both HP & VP.

Type-I

Q-9. A line AB, has its end A 7mm behind VP and 18mm below HP and the end B 38mm behind the VP and 49mm below the HP. The distance between the end projectors is 37mm. Draw the projections of the line and Find out its TL, ϕ & Traces.

Step-1. Draw the Projections of pt. A & B.

A → Third Quadrant, (a, a')
B → Third Quadrant (b, b').

Join ab, a'b'.

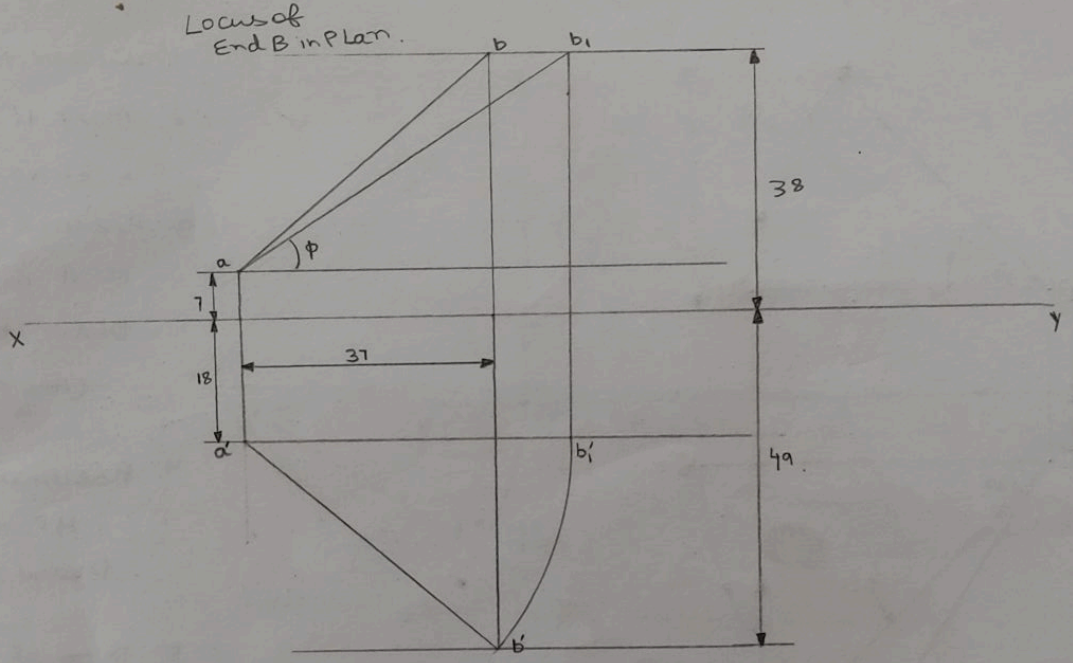
Step-2. Draw Horizontal line at pt. b & b'.

Step-3 Draw Horizontal line From a & a' parallel to X-Y line.

Step-4. Rotate a'b' about a' to Position a' b_1' so that it becomes parallel to X-Y line.

Step-5. Extend pt. b_1' to the Locus of pt. b & denoted it by b_1.

Step-6. True Length is ab_1 angle made by true length is ϕ.



Top view में 'ϕ' मिलेगा.

F.V → a', b' a', b_1' ← True Length
T.V → a, b a, b_1

$\phi = 32°$

JSR

Q-11. A Line AB, 65mm Long, has its end A both in HP & VP. It is Inclined at 45° to the HP & 30° to the VP. Draw its projections when

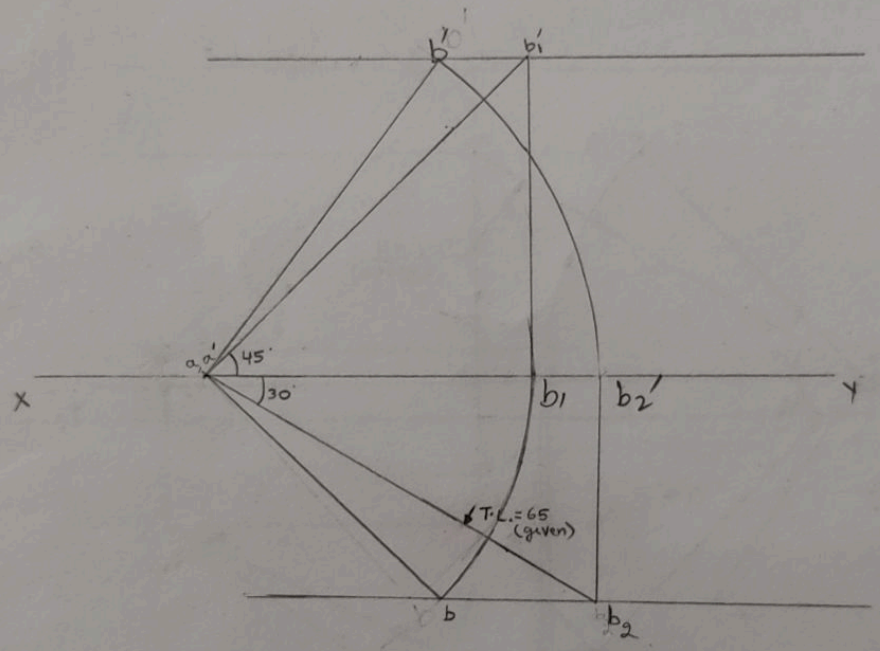
↓ It Means Reference Plane (0,0) Point.

a) Line is in third Quadrant

b) Line is in First Quadrant.

First Quadrant.

Firstly Consider Line Inclined at 45° to HP. s/pl to VP means that we get true Length while drawing Front View.



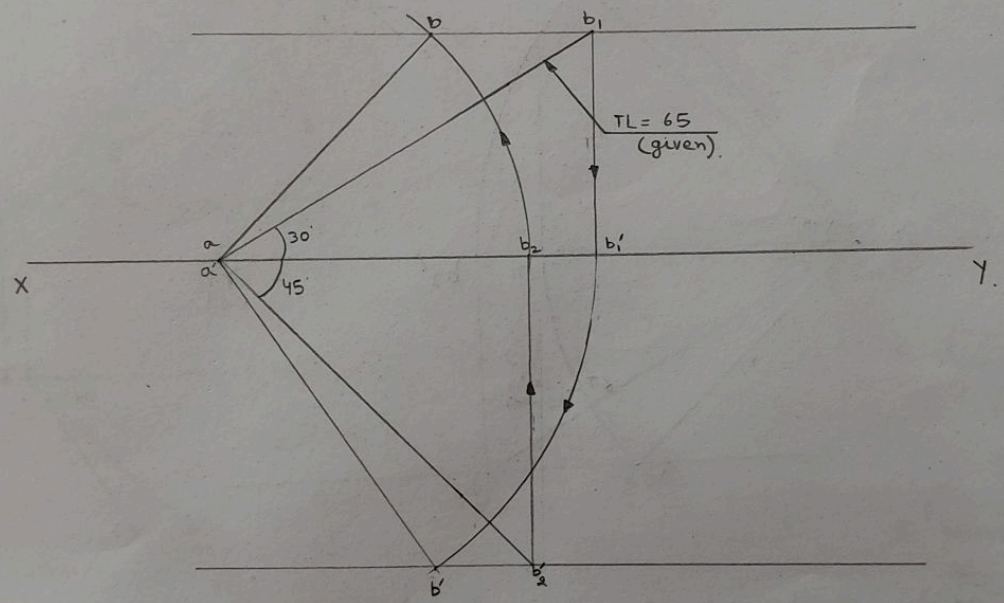
b_1' b_2'
b_1 b_2.

a, a'
a b_1'
a b_2] → True length

Actual length
a' b'
a b.

→ If angle inclined 30° to VP, Front View ↑ actual length ~~आए~~ आएगी।
Top View ↑ True Length.

Third Quadrant.



Step-1
If line inclined at 45° to Horizontal we get Front view below x-y line in three quadrant. Front view ↓ True length. ↓ 'pt 2'

~~नीचे~~ pt 2
ऊपर pt 1

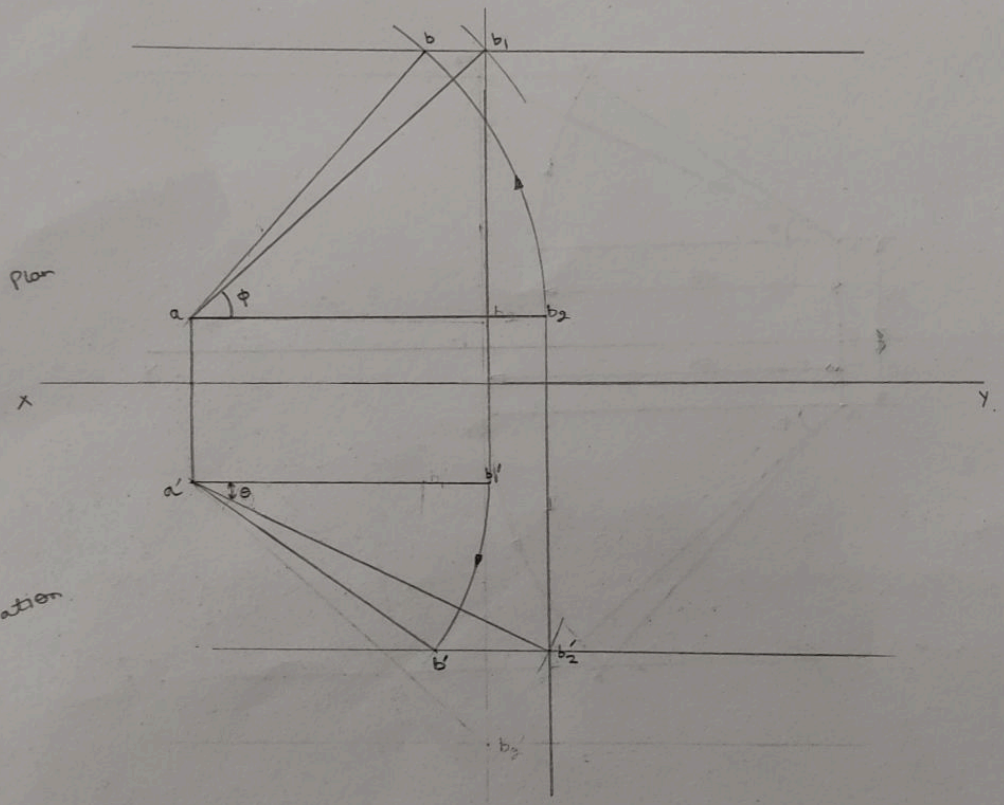
Step-2 Draw $b_1 b_1' \perp$ ar to X-Y
$b_2' b_2 \perp$ ar to X-Y.

JSR.

Q-12. Plan and elevation of line AB, 60mm Long, measure 54mm & 45mm respectively. End A is 15mm From HP and 10mm From VP. Draw its projections and determine its inclinations to reference planes when the line Lies in;

a) Third Quadrant

b) First Quadrant.



Third Quadrant.

$\phi = 40°$

$\theta = 25°$

Step-1 Draw XY line and Locate projections a' and a OF the end A on projectors.

Step-2. Draw Plan (TV) Length is equal to 54mm & elevation (FV) length is equal to 45mm.

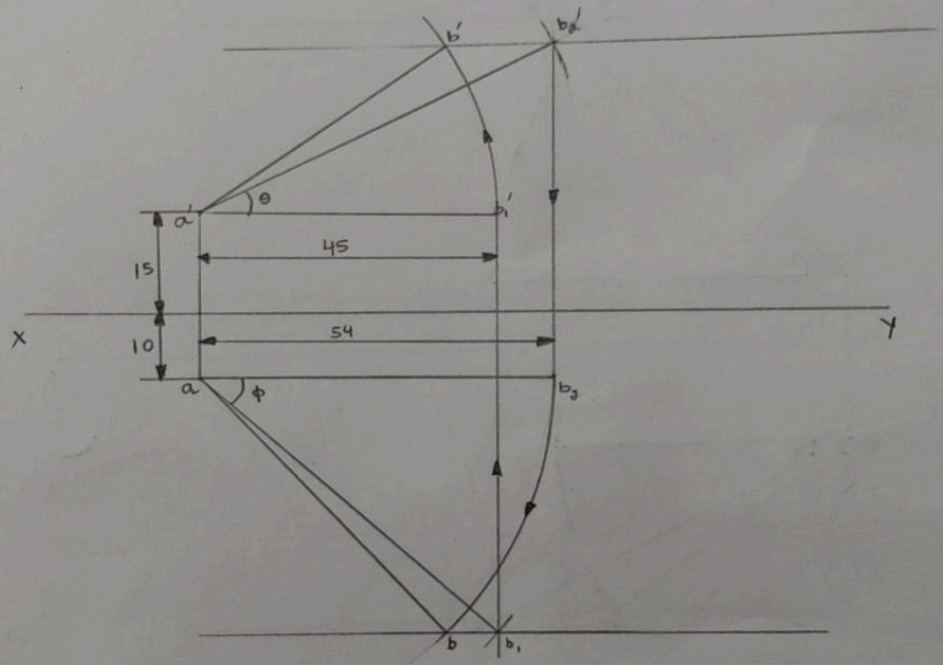
Step-3 Draw Vertical line From b_2. From a' as centre take radius as 60mm. Join a' to b_2' $a'b_2'$ is T.L.

Step-4 Through b_2' draw a line parallel to x y line a'b' is actual Length.

Top view → 2
Front view → 1.

$a'b'$ → actual length
$a'b_2'$ → True length.

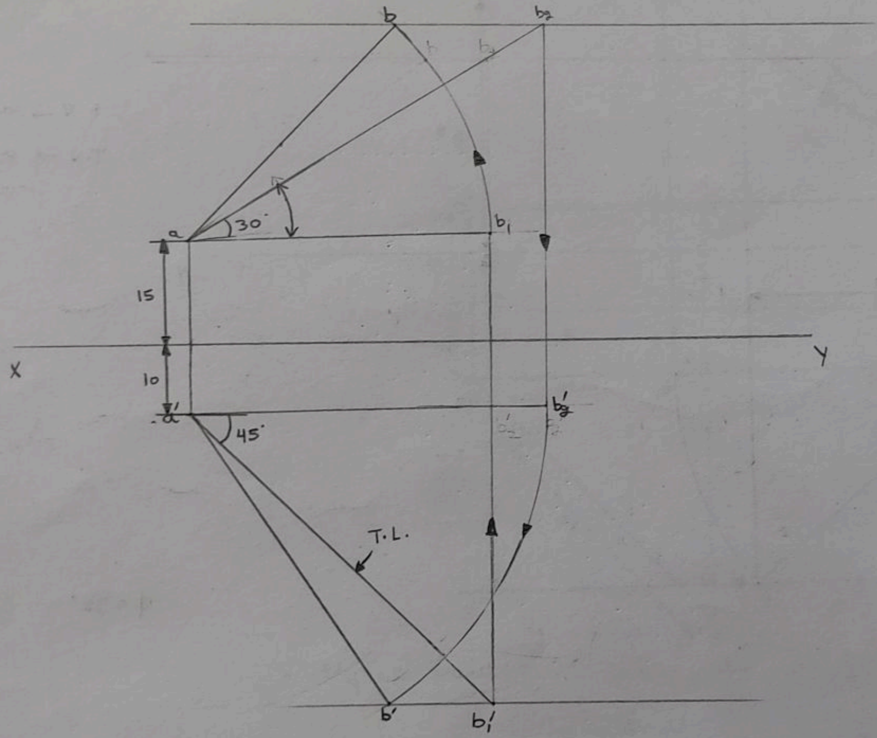
First Quadrant.



Q-10. A line AB, 60 mm Long, has its end A 15mm behind VP and 10mm below HP. It is Inclined at 45° to the HP and 30° to the VP.

Draw its projections when i) Line Lies in third Quadrant.

ii) End B Lies in First Quadrant.



T.L. → True Length

जो angle Top View में 'φ'
Front View में 'θ'

Steps For construction.

1. Draw X Y line
2. Mark the Plan a (Top view of Pt. A) & elevation a' (Front view of Pt. A)
3. Assuming the line AB to be parallel to VP and Inclined at 45° to HP. Draw its elevation $a'b_1'$ & Plan (ab_1) (For Front View we see True length)
4. Assuming line AB to be parallel to HP and Inclined at 30° to VP Draw its Plan ab_2 (Top View) & elevation ($a'b_2'$).
5. Through b_1' & b_2. Draw a line parallel to X-Y line. also called locus line.
6. With top view (Plan) at a, i.e. a, as centre and ab_1 as radius, strike an arc to Intersect the line (b_2).
7. Join a to b. Then ab is required Plan (top view) of line AB.