19-05-2021

FV-6, EGR

Projections of Plane

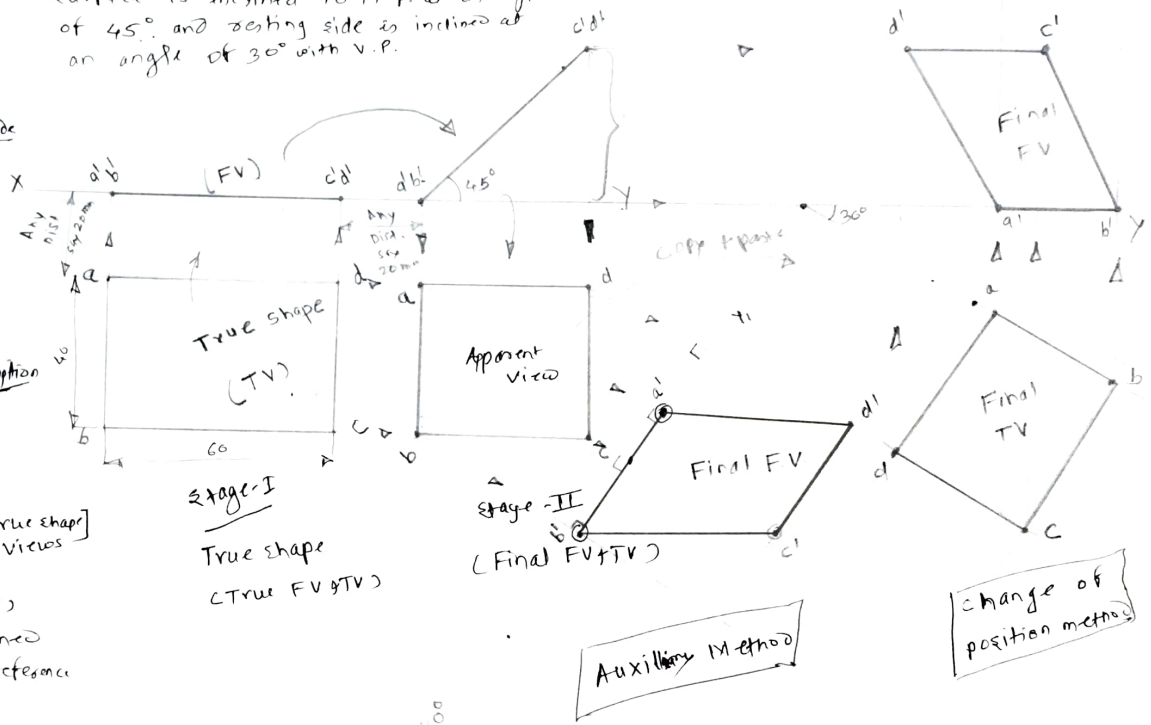
1) Rectangular Plane

2) Rhombus

3) Isosceles Triangle — OC = Altitude

4) Circular Plane

Problem : Rectangular Plane of 60mm x 40mm size is resting on H.P. on its smaller side. Draw the projections of plane, when its surface is inclined to H.P. at an angle of 45° and resting side is inclined at an angle of 30° with V.P.



Step - I

* consider plane laying or resting on its surface on reference plane i.e. HP or V.P. — Assumption
* Take resting side / corner / Edge on left side (in its true shape)
* Draw F.V. & T.V. in 1st stage [True shape views]

Step - II

* Make Line view (i.e. FV or TV) inclined as per inclination mentioned in problem statement ⇒ Resting reference plane (i.e. HP or V.P.)
* complete FV & TV in 2nd stage.

Step - III

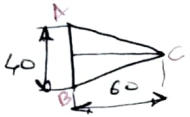
* Make apparent view of plane (TV or FV) inclined to N.P. resting reference plane say H.P. or V.P.
* By taking projection complete final F.V. or T.V.

(25th MAY 2021)

An isoceles triangle having its base 40 mm and Altitude 60 mm is resting on the H.P. on its base. Draw the projections of Plane when its surface is inclined at an angle of 45° to H.P. & base which is on H.P. is making an angle of 50° to the V.P.

Given Data:

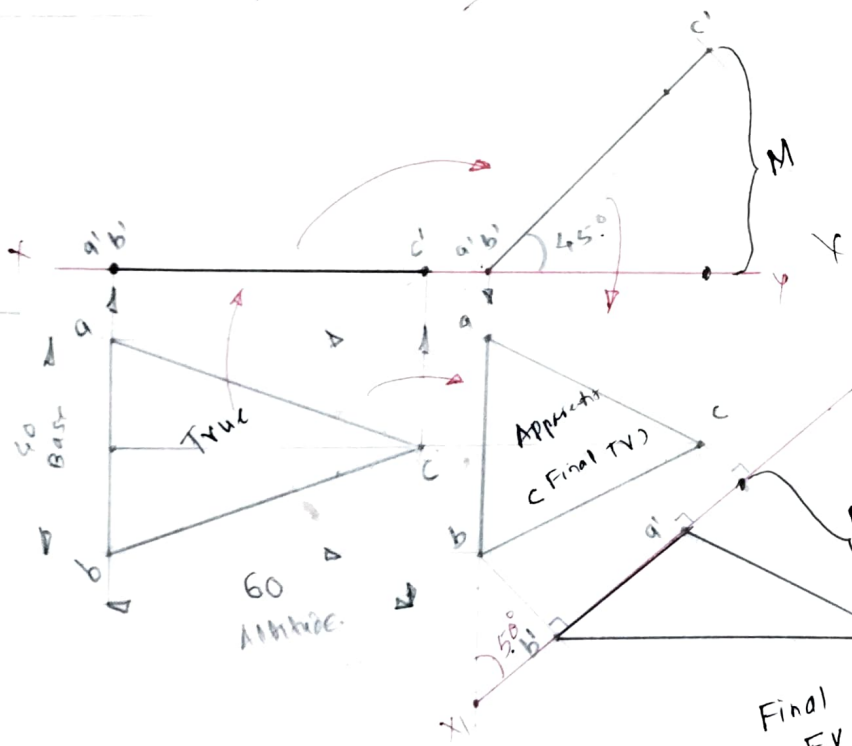
Type of plane – Isoceles triangle



Resting on HP → on its base

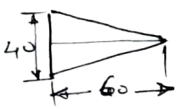
θ – 45° (H.P.) - surface

ϕ – 50° (V.P) - resting side / Base



An isoceles triangle ABC having its base AB = 40 mm & Altitude 60 mm is resting on V.P. on its base AB. Draw the projections of plane when its surface is inclined to V.P. at an angle of 45° and the base AB which is on the V.P. is making an angle of 50° to H.P.

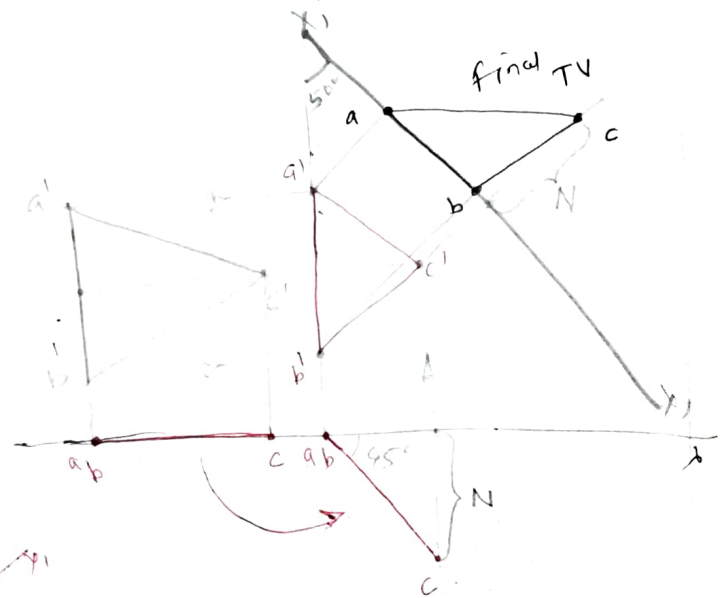
Given data



Resting on V.P – on its base

θ = 50° (H.P.) - Base

ϕ = 45° (V.P.) - surface



RHOMBUS (26th May 2021)

Problem: A rhombus having Major Diagonal 70 mm and Minor Diagonal 40 mm is resting on the HP on its corner of longer diagonal. Draw the projections of rhombus when its surface is inclined to H.P. at an angle of 45°

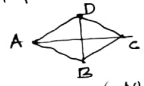
AND

(A) Minor diagonal is inclined to VP at an angle of 30°

(B) Major Diagonal is inclined to V.P. at an angle of 30°.

Given Data: Type of Plane — Rhombus

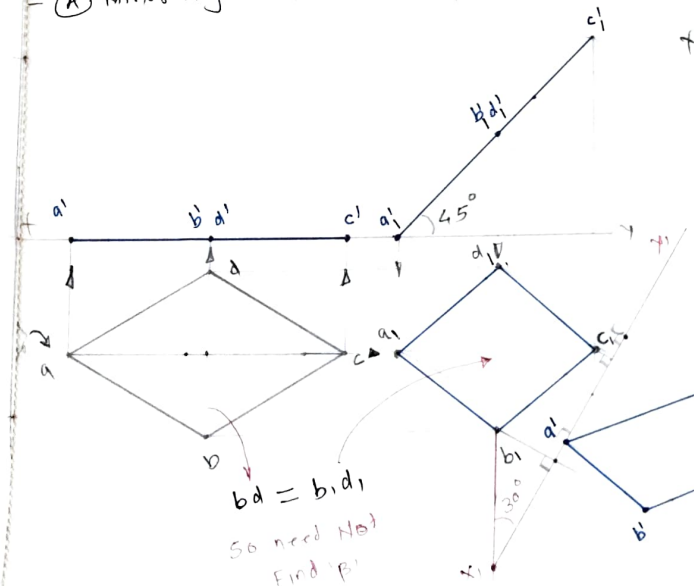
AC = 70 mm
BD = 40 mm



Resting on H.P. — corner of Major Diagonal 'A'

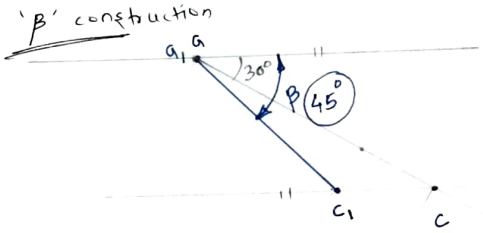
surface inclined to H.P. = 45°

CASE (A) Minor Diagonal inclined to V.P. = 30° (BD)

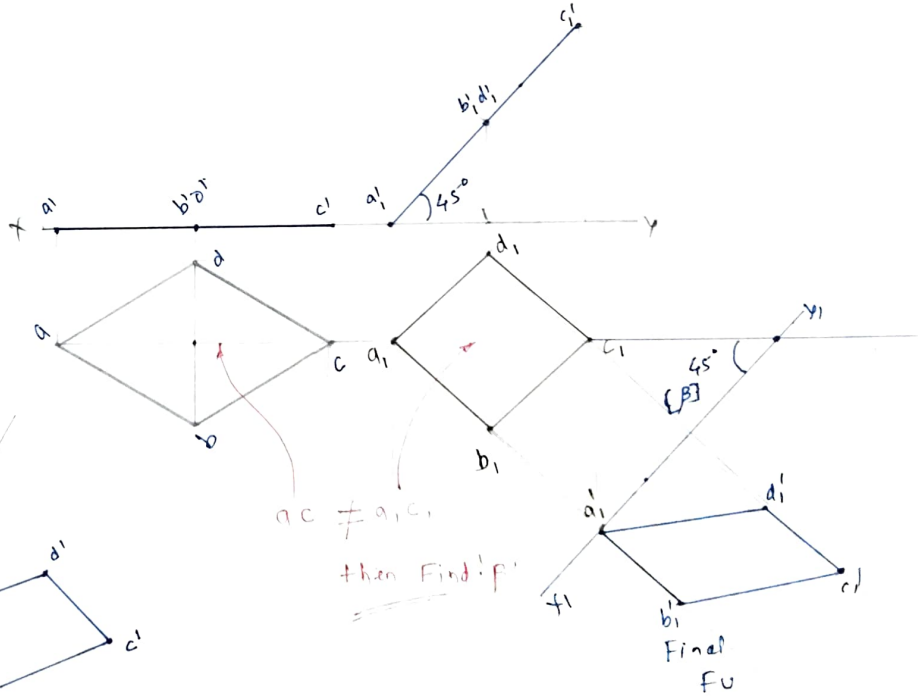


Final F.V.

'β' construction



CASE (B) Major Diagonal inclined to V.P. = 30° (AC)



Final F.V.

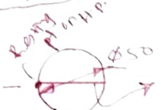
Circular Plane (26.05.2021)

A circular plate of diameter 50 mm is kept on the H.P. on a point of its circumference. The surface of the circular plate makes an angle of 40° to the H.P. Draw the projections of the circle when diameter passing through the point on H.P. making an angle of 30° to V.P.

Answer

Given data :-

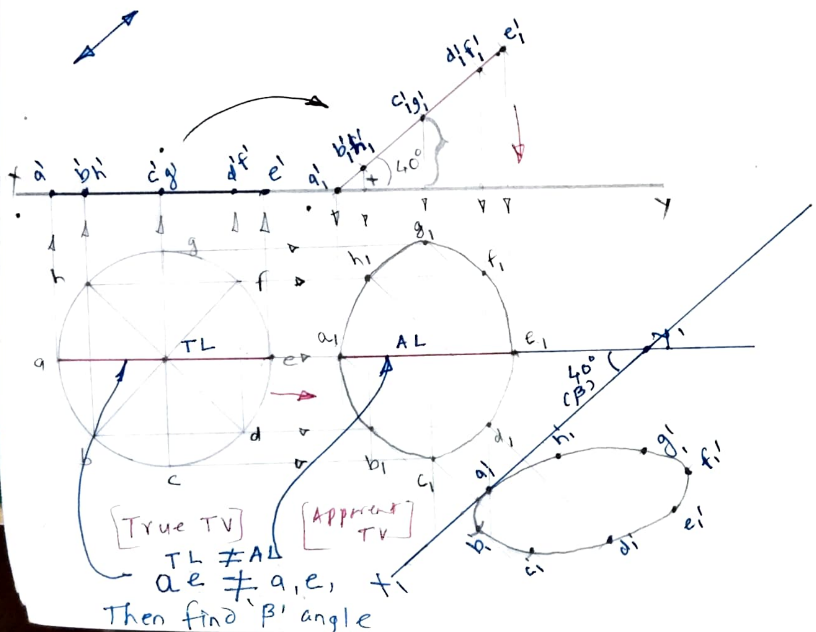
Type of Plane –

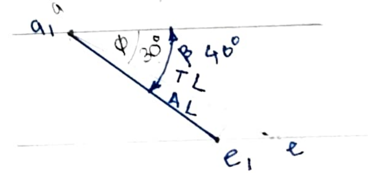


Resting on H.P = point of its circumference

Inclination = 40° to H.P (surface)

Diameter through point on circumference = 30° to V.P





Must to show 'β' construction [somewhere on Answer page]