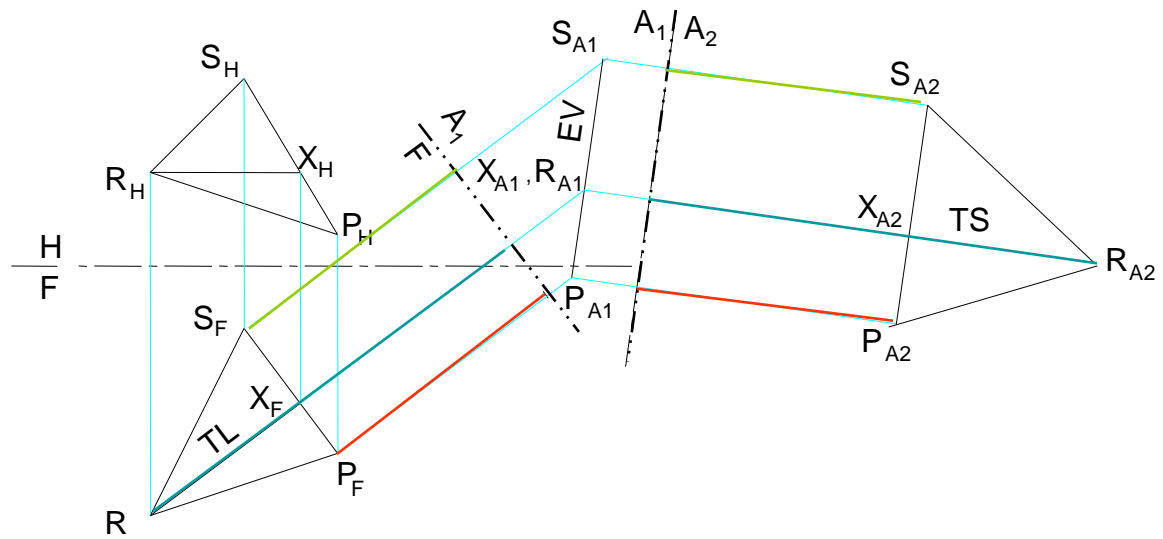


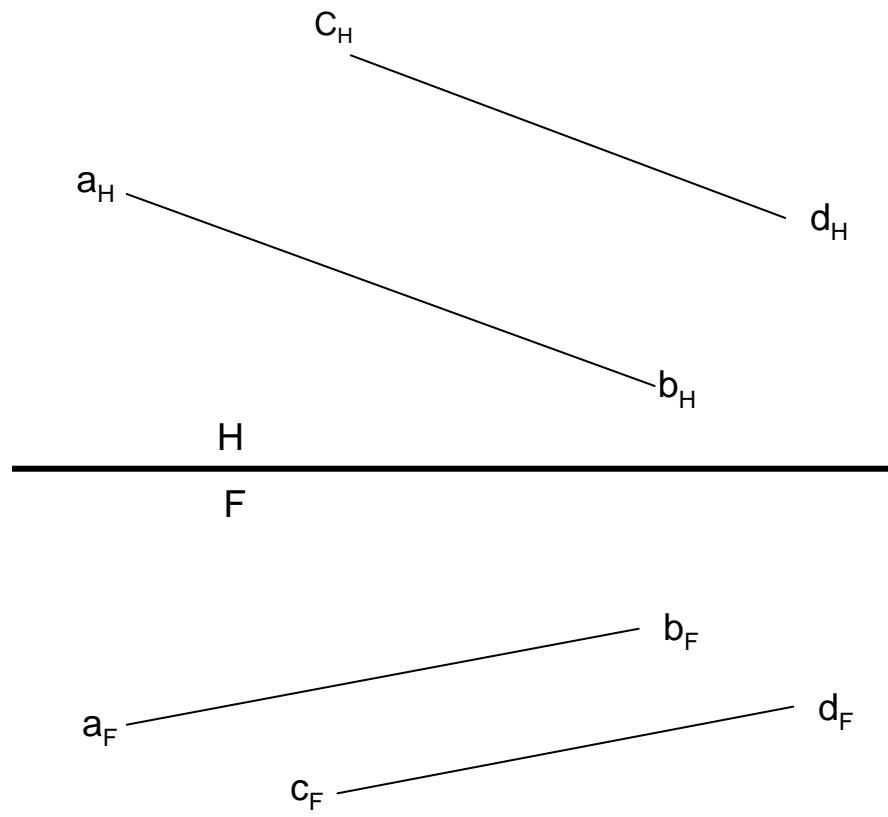
TA 101

Lecture -17

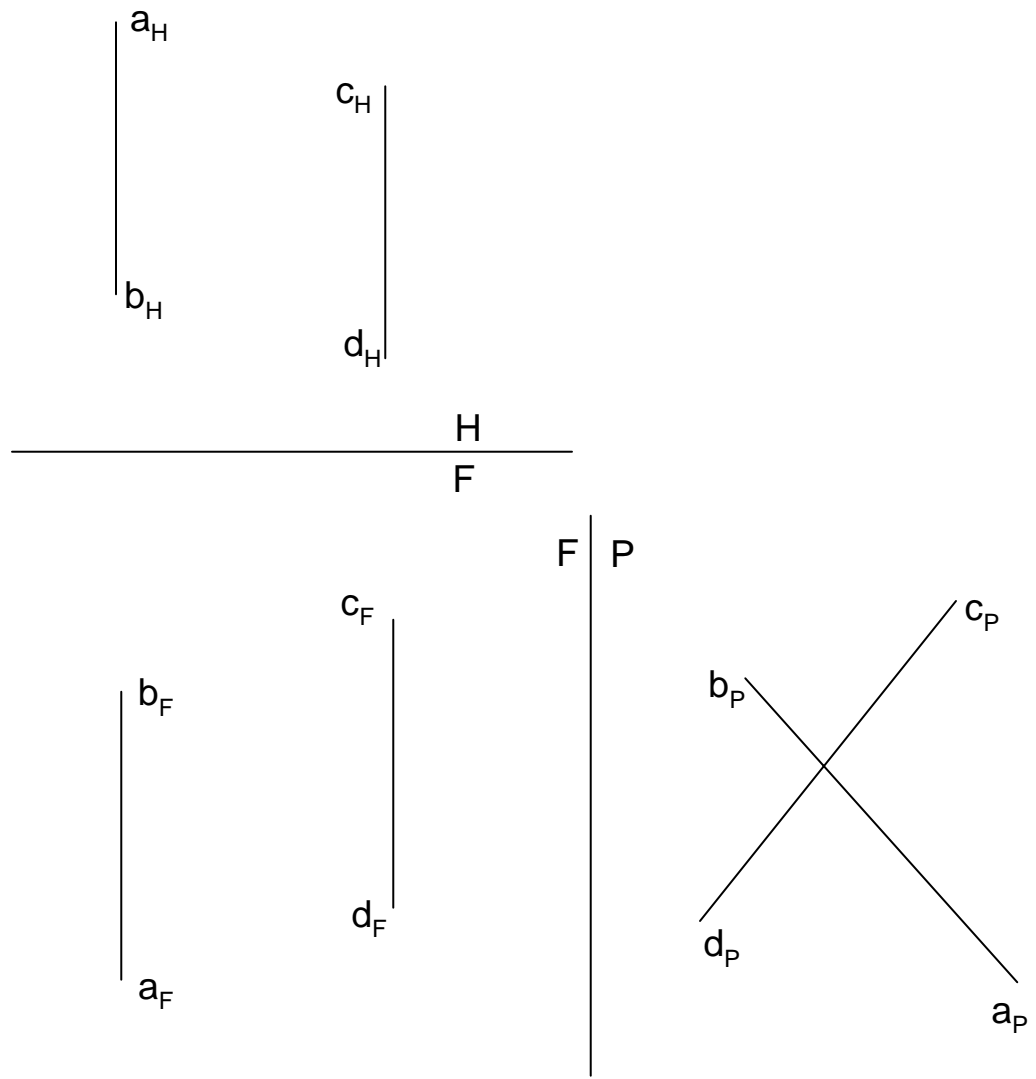
<http://home.iitk.ac.in/~mukesh/>

True Shape of Plane through EV and Auxiliary Plane





Are the lines parallel?

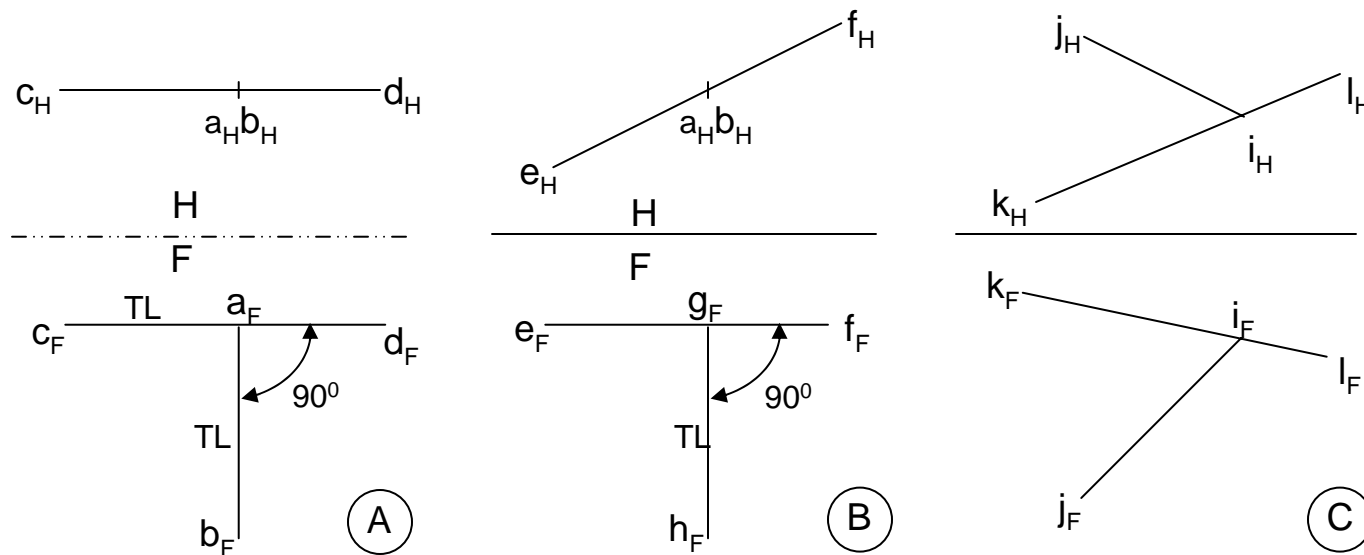


Are the lines parallel?

Conditions for lines to be parallel

- Lines appear parallel in all views**
- If oblique lines appear parallel in two adjacent views; they are necessarily parallel (no need to see third view)**

Test for Perpendicularity

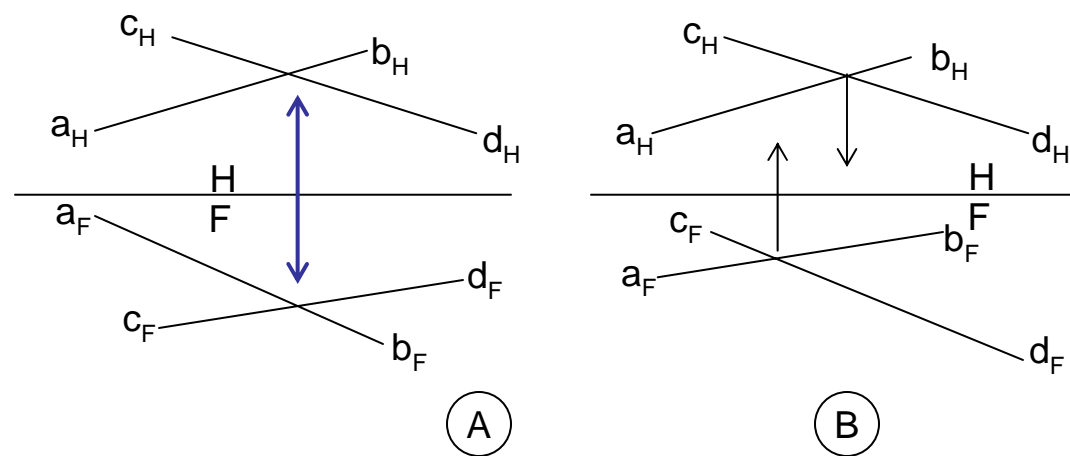


Are the lines perpendicular?

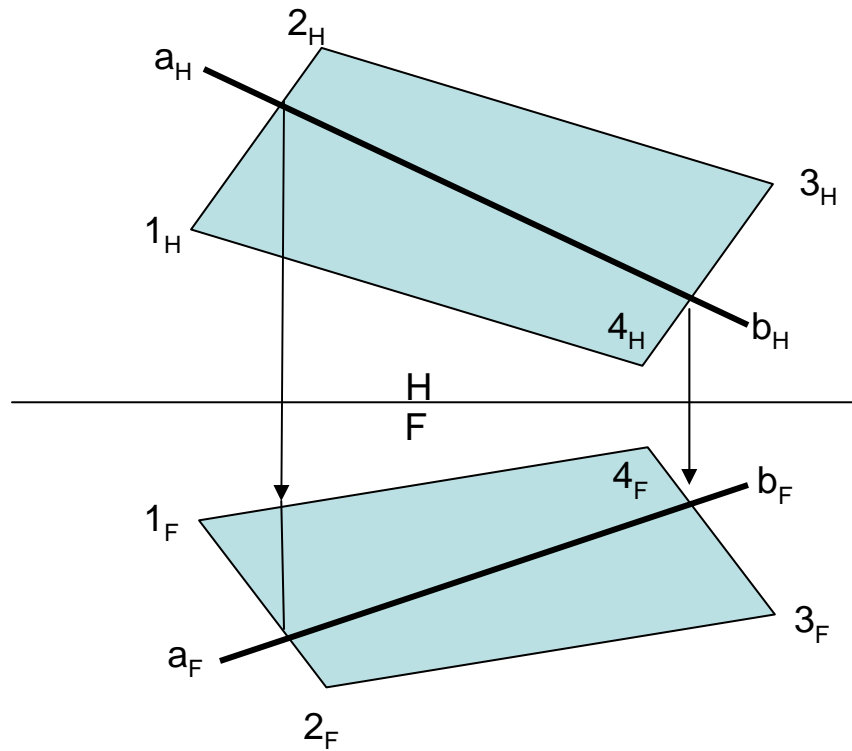
condition: at least one of the lines should be in TL and make 90° angle with other line.

If none of the lines is in TL and show 90° angle between them, they are not perpendicular

Test for intersection

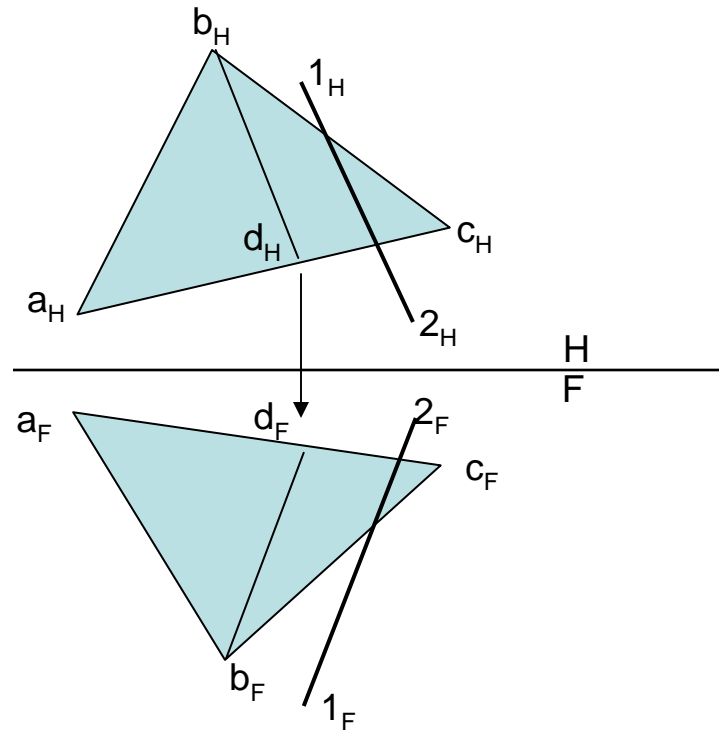


Conclusion – point of intersection of two lines must stay aligned in all views



A Line in a plane – if a line is in the plane, all points of intersection should stay align
In all views

Construct a line parallel to a plane

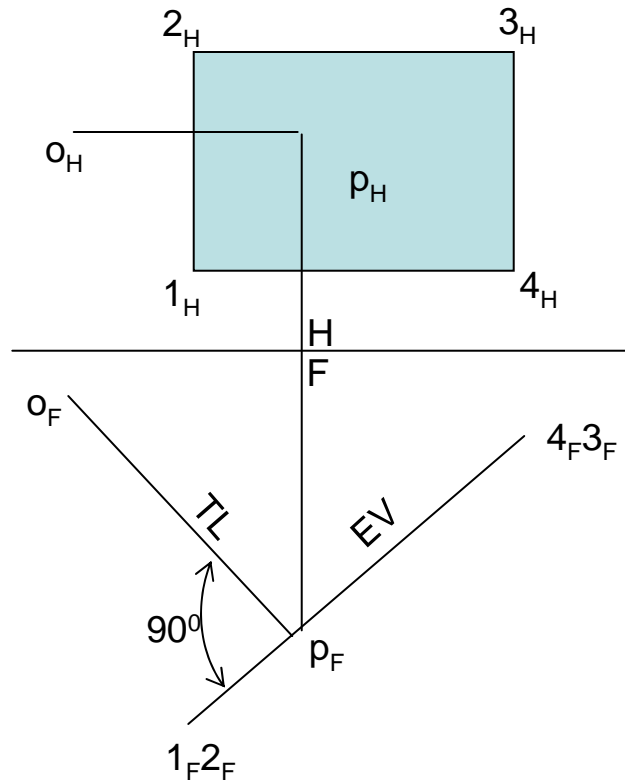


See we forced the line 1-2 to be parallel to line b-d in front view

As a result, line 1-2 is parallel to the given plane (abc)

A line perpendicular to a plane

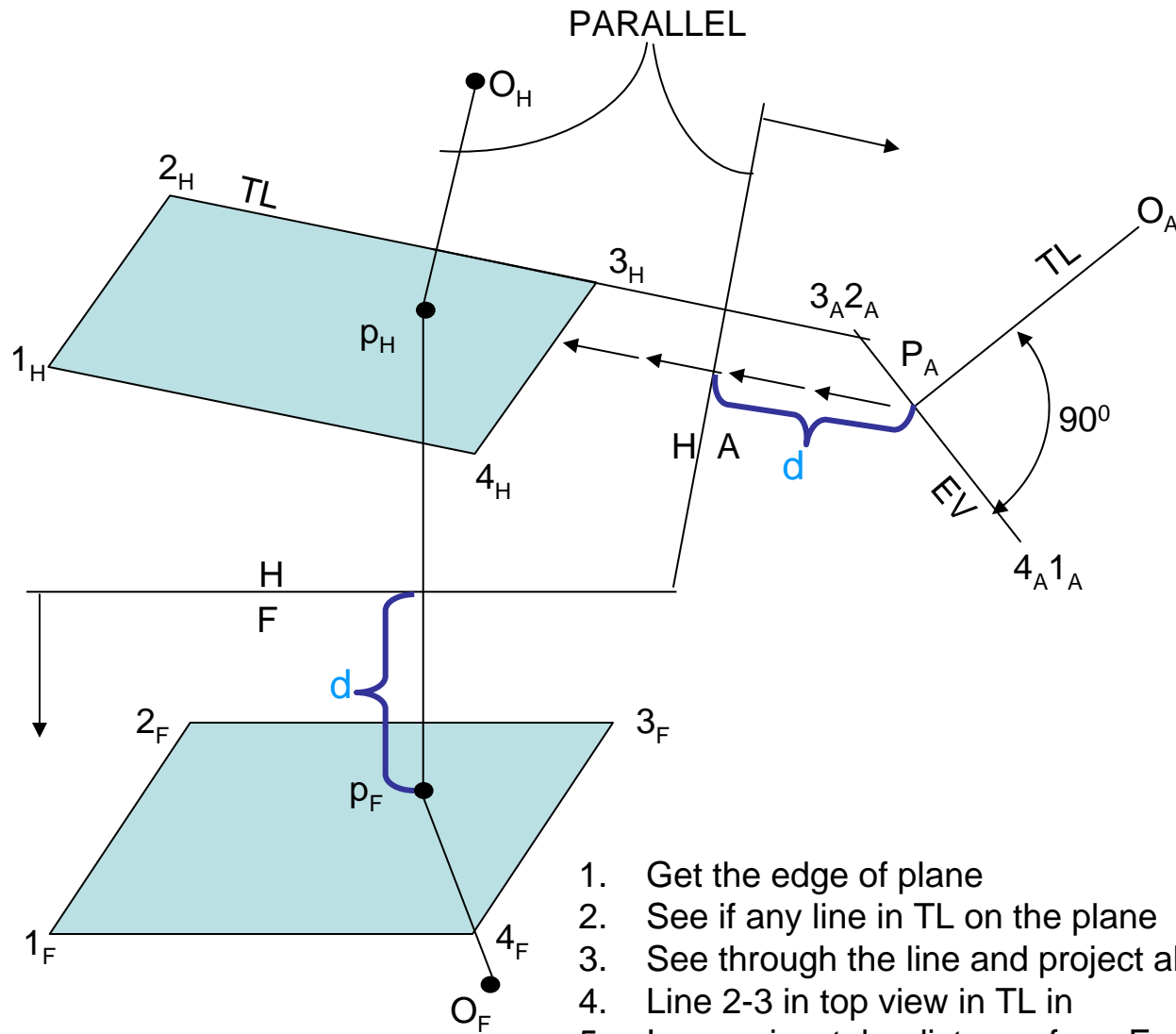
Very useful in finding shortest distance from a point to a plane



A line is perpendicular to plane when the line is in true length at a 90° angle to an edge view of the plane. Line OP is perpendicular to plane 1-2-3-4

How to draw a perpendicular from a point with this concept?

Draw a perpendicular to a plane from point – Recall edge view of plane and perpendicular at 90° needed



1. Get the edge of plane
2. See if any line in TL on the plane
3. See through the line and project all points
4. Line 2-3 in top view in TL in
5. In aux view take distance from Front and locate points
6. Draw a perpendicular from O_A on EV ~ $O_A P_A$ (in TL?)
7. Project P_A to Top view (see the arrows)
8. Project P_H to Front view see P_F