

Strand	TD13.1 GEOMETRY
Sub - Strand	TD13.1.1 Plane & Space Geometry
Content Learning Outcome	TD13.1.1.1 Determine the true lengths of lines and true shapes of planes.

LAMINAE

Learning Outcomes

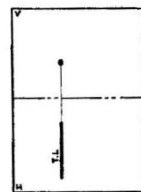
By the end of this topic, students will:

- a) identify the true length and auxiliary plane rules.
- b) find the true length and true shape.

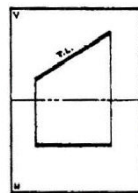
A. True Length Rules

A true length in one of the orthographic planes is obtained when its adjacent view is parallel to the reference line. In cases, where true length is not given, we will use graphical technique to obtain subsequently the true shape.

If one view is seen as a point the other view is TL.

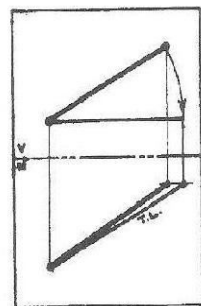


If one view is parallel to reference line the adjacent view is TL.

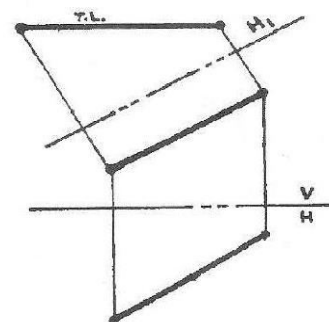


If there is no view parallel to the reference line (RL) then we need to create the situation whereby a line becomes parallel to the reference line. There are two different methods:

METHOD: Rebatment Method



METHOD 2: Auxiliary View Method



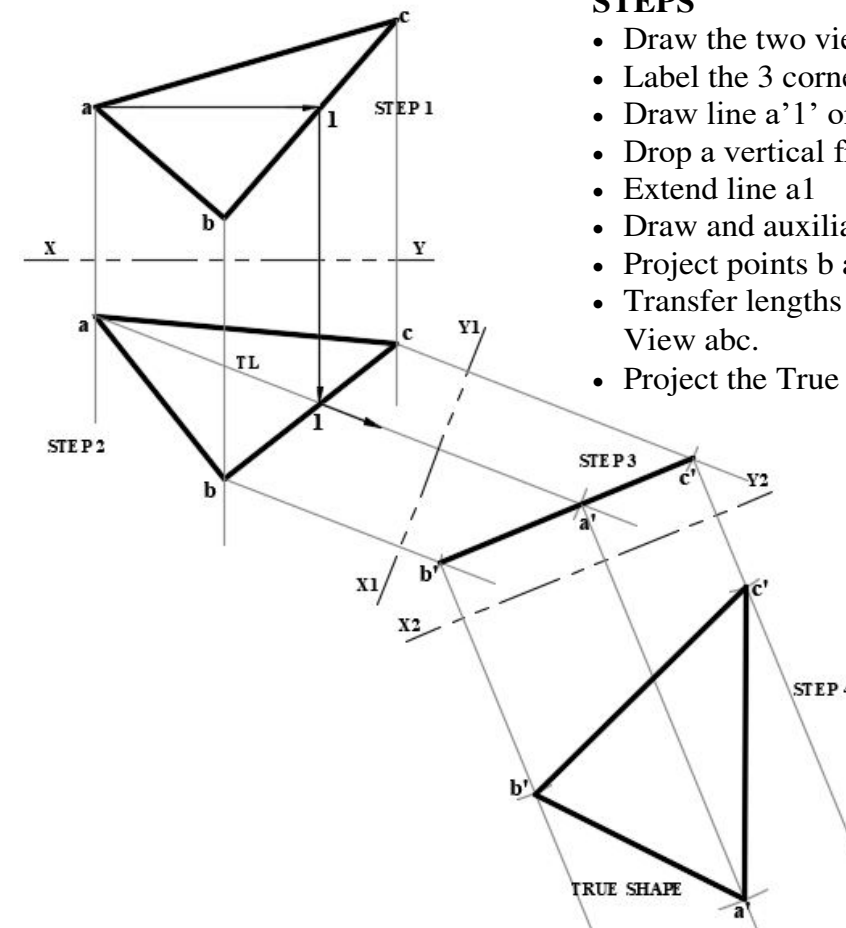
Method 1: Draw a line parallel to the RL as shown and rotate an arc. Project the intersection vertically down and extend the horizontal. The intersecting point will produce the TL.

Method 2: Draw a new RL to any given view and project perpendiculars. Take lengths from one plane back to produce the TL.

B. True Shape of Lamina (Triangular Plane)

Given: Two views of Lamina ABC in First Angle Projection.

Required: Find the True Shape of Lamina ABC



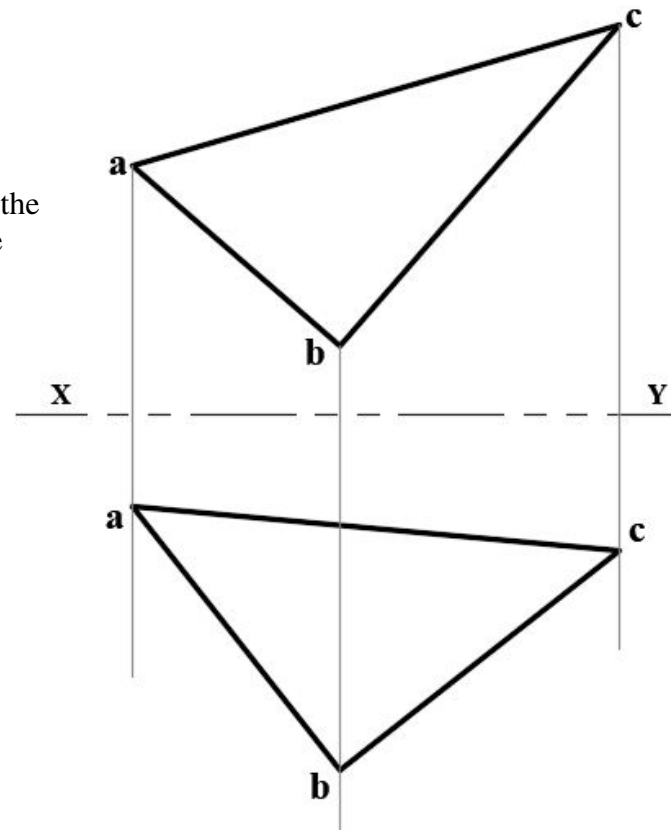
STEPS

- Draw the two views of Lamina.
- Label the 3 corners of both views.
- Draw line a'1' on the Elevation parallel to RL
- Drop a vertical from 1' to locate 1 on the Plan view.
- Extend line a1
- Draw an auxiliary RL perpendicular to line a1
- Project points b and c parallel to a1
- Transfer lengths from one plane back to draw the Edge View abc.
- Project the True Shape perpendicular to the Edge View

QUESTION 1

Given: Two views of a fully dimensioned Lamina in First Angle Projection

Required: Redraw the two views and project the True Shape of the Lamina. Use the above example as a guide.



THE END