

Multi-view



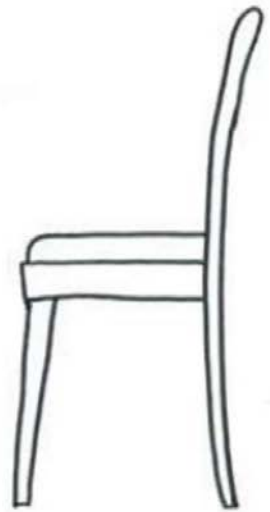
TOP



LEFT
SIDE

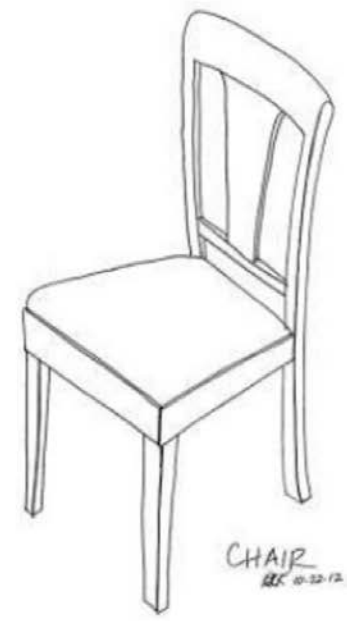


FRONT



RIGHT SIDE

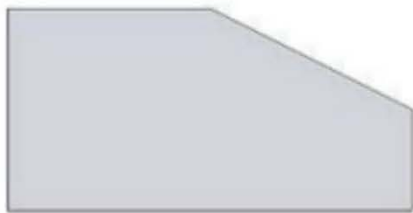
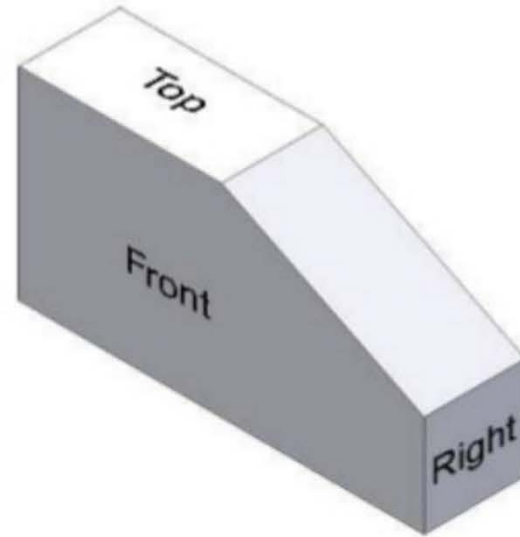
*Art
10-20-11*



CHAIR
10-20-11



TOP VIEW



FRONT VIEW



RIGHT SIDE VIEW

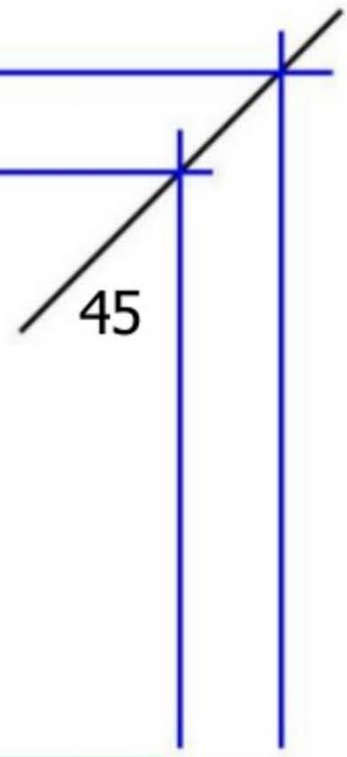
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width



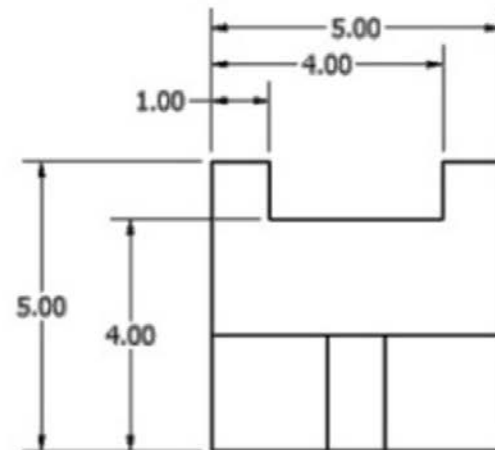
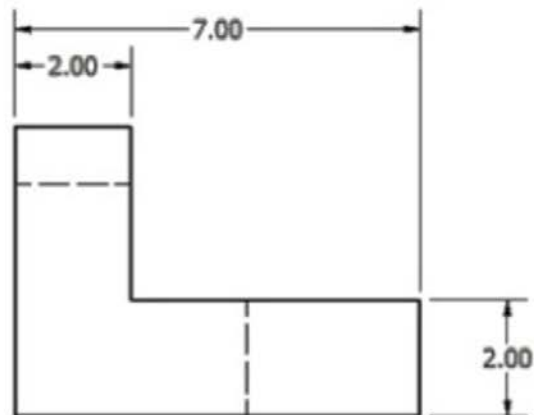
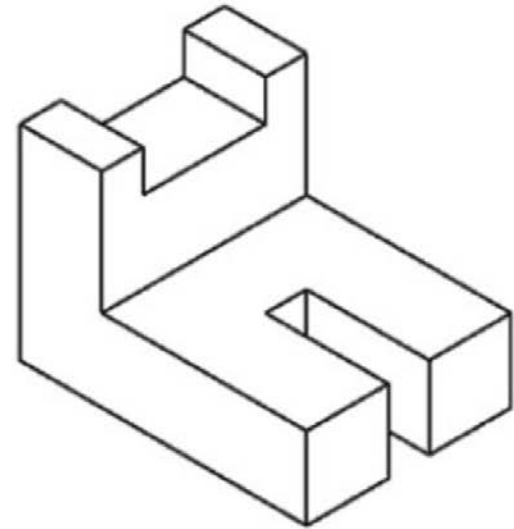
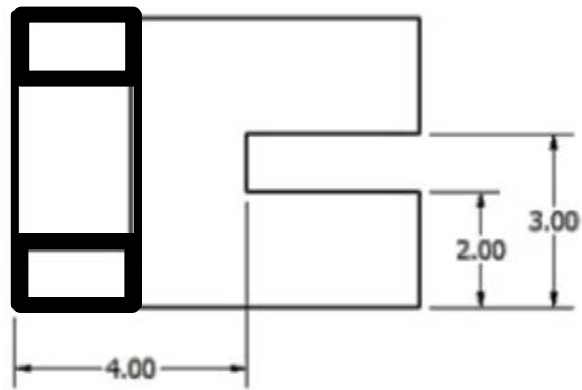
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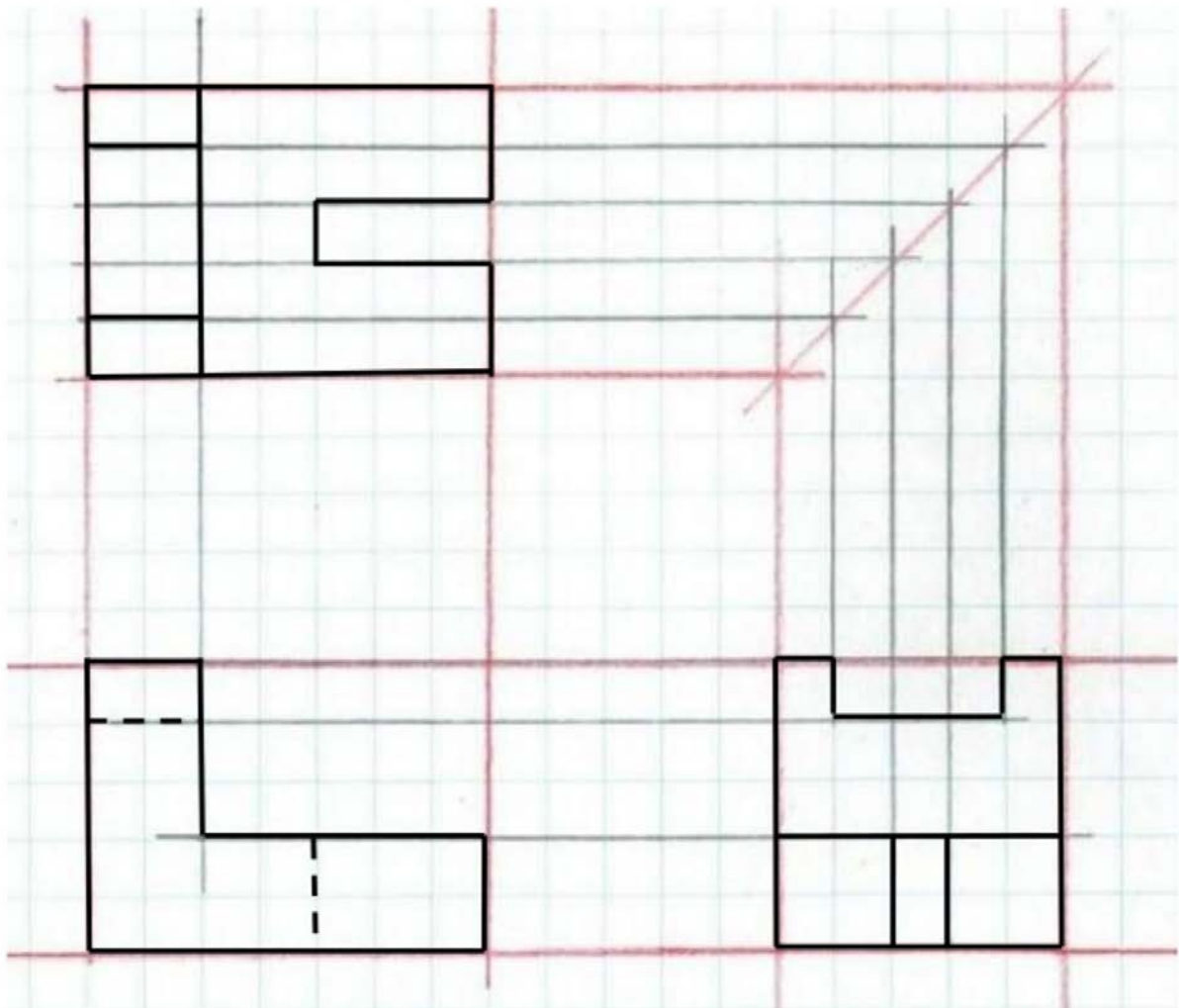


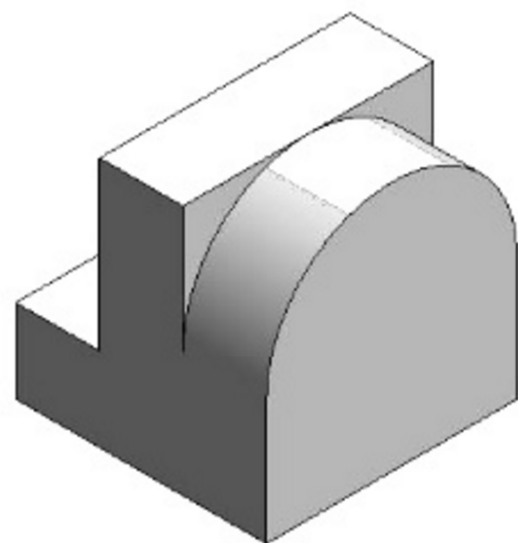
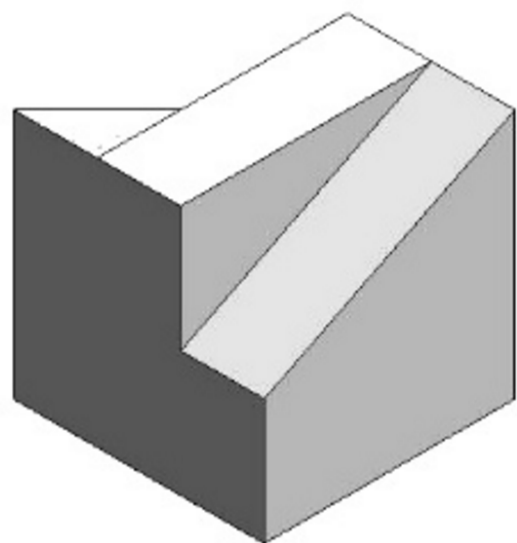
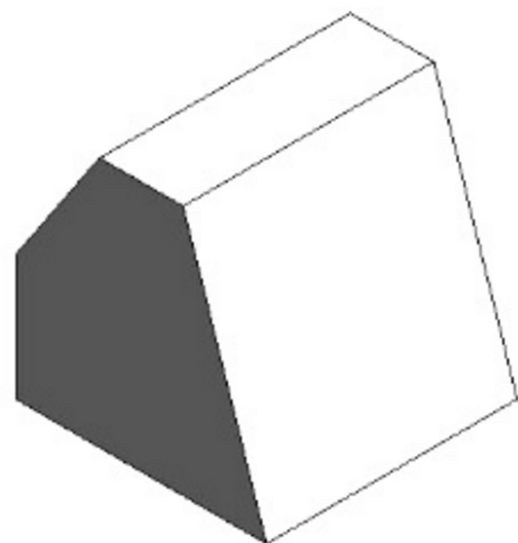
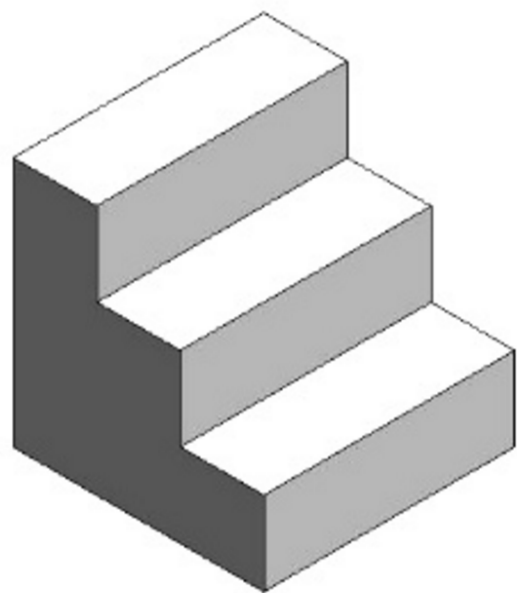
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depth

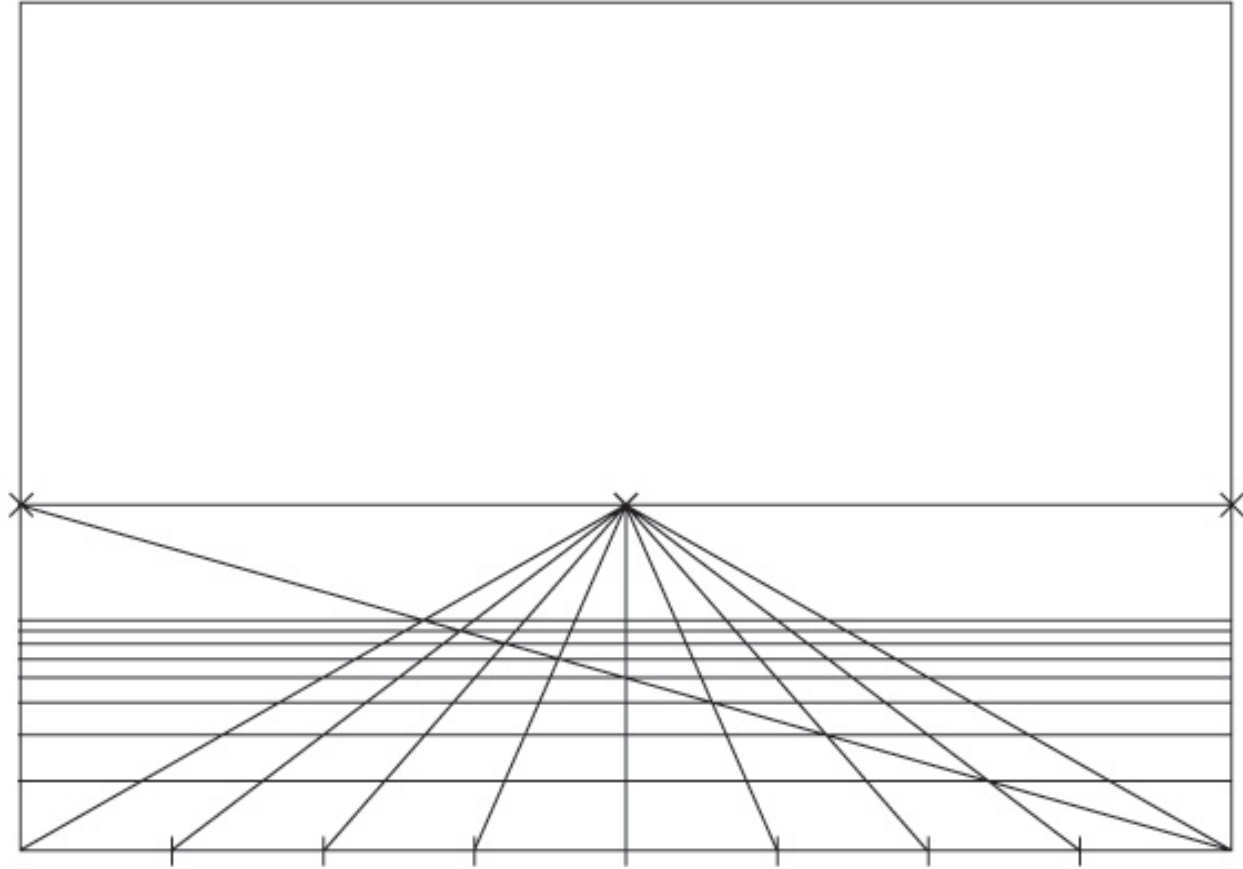


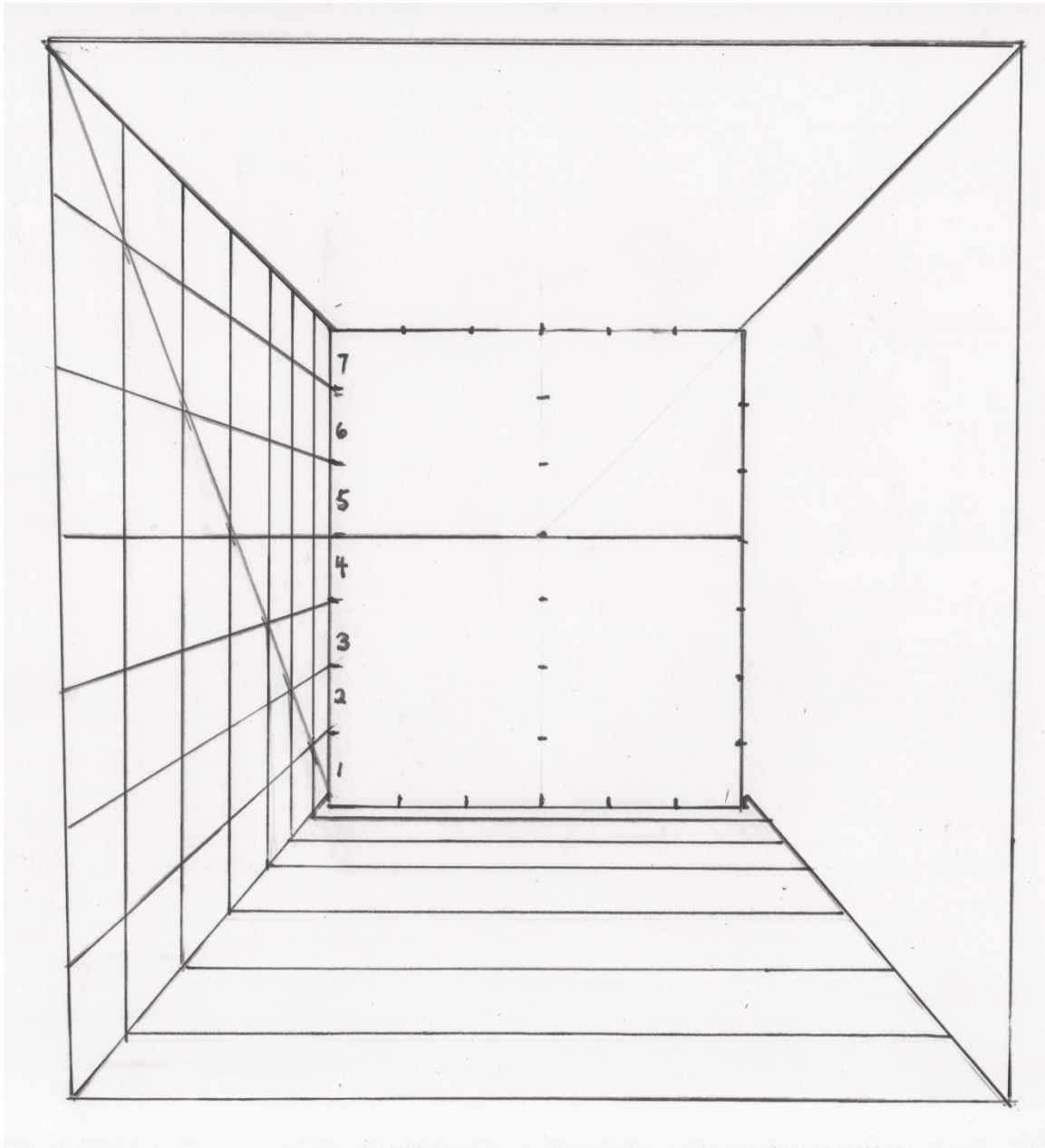






1-point grid

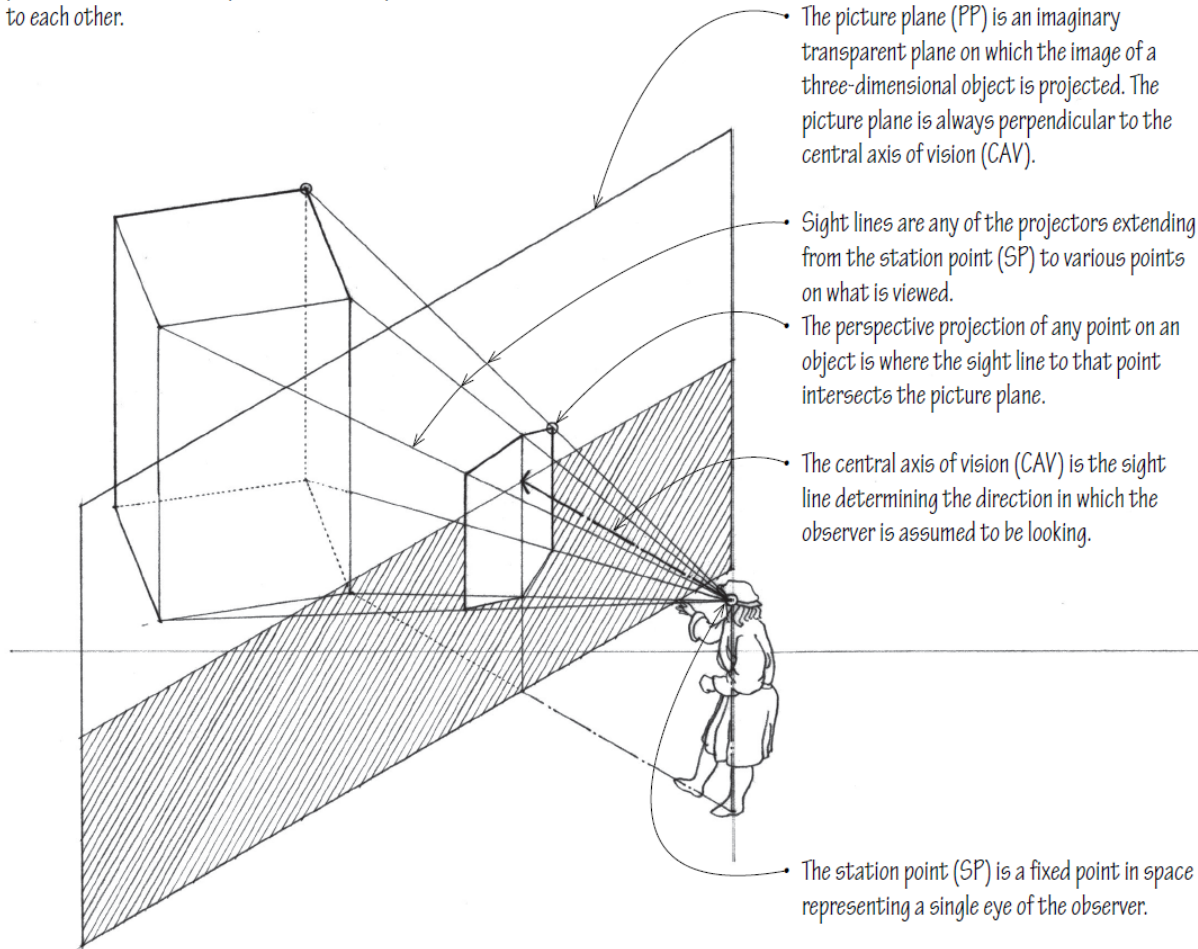




2-point perspective

PERSPECTIVE PROJECTION

Perspective projection represents a three-dimensional object by projecting all its points to a picture plane by straight lines converging at a fixed point in space representing a single eye of the observer. This convergence of sight lines differentiates perspective projection from the other two major projection systems—orthographic projection and oblique projection—in which the projectors remain parallel to each other.



The picture plane (PP) is an imaginary transparent plane on which the image of a three-dimensional object is projected. The picture plane is always perpendicular to the central axis of vision (CAV).

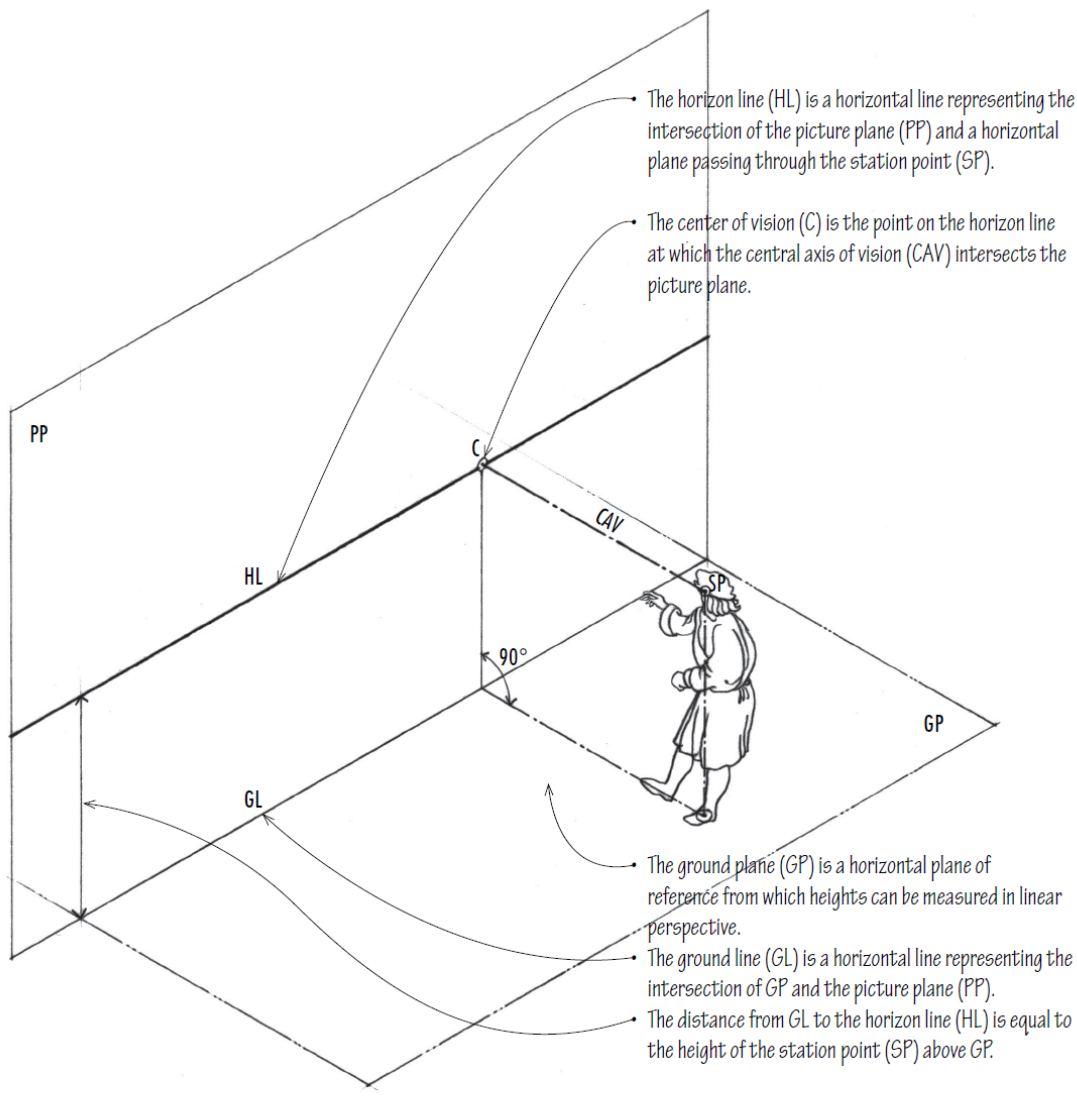
Sight lines are any of the projectors extending from the station point (SP) to various points on what is viewed.

The perspective projection of any point on an object is where the sight line to that point intersects the picture plane.

The central axis of vision (CAV) is the sight line determining the direction in which the observer is assumed to be looking.

The station point (SP) is a fixed point in space representing a single eye of the observer.

PERSPECTIVE ELEMENTS



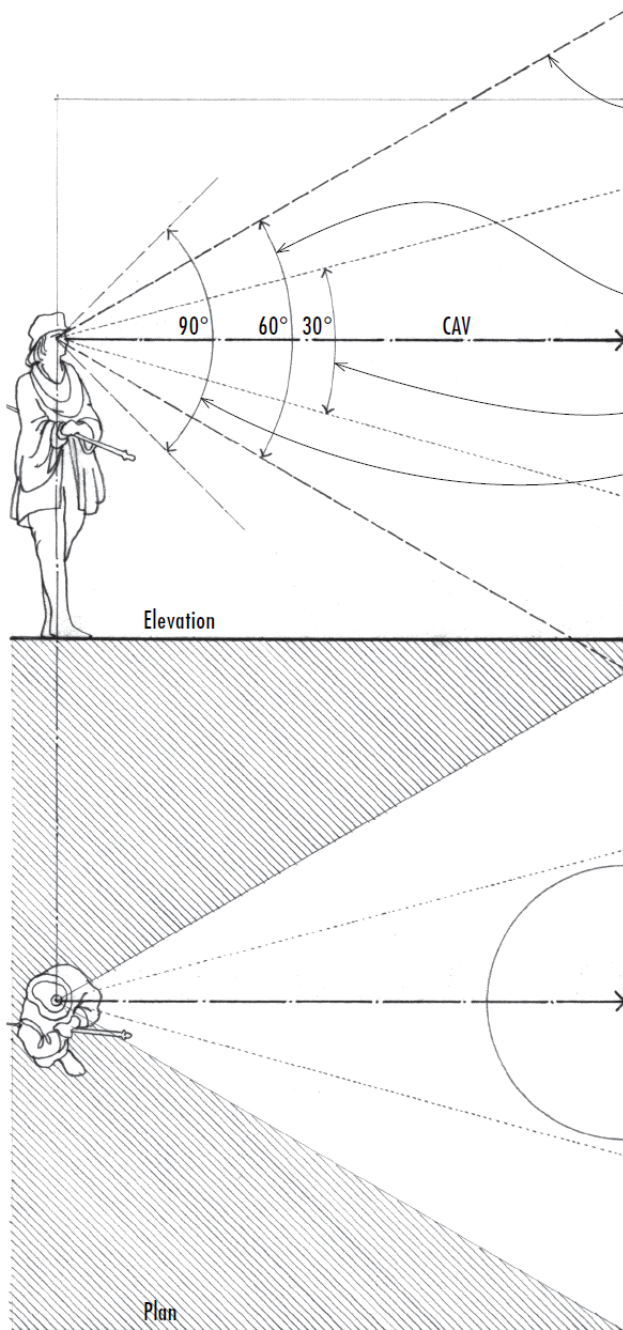
The horizon line (HL) is a horizontal line representing the intersection of the picture plane (PP) and a horizontal plane passing through the station point (SP).

The center of vision (C) is the point on the horizon line at which the central axis of vision (CAV) intersects the picture plane.

The ground plane (GP) is a horizontal plane of reference from which heights can be measured in linear perspective.

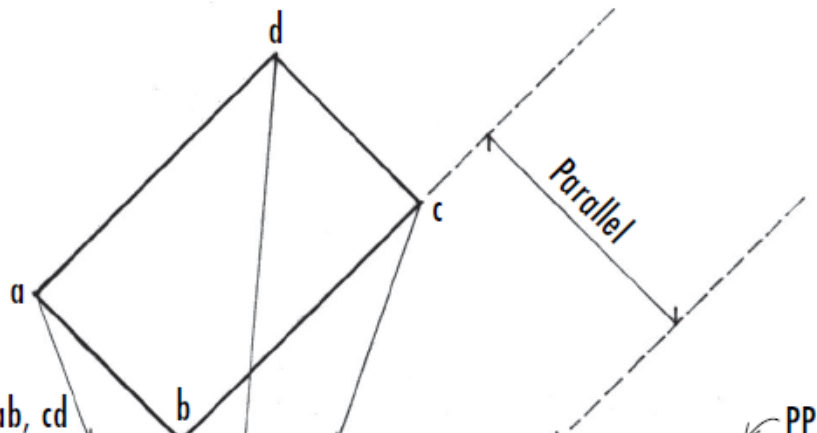
The ground line (GL) is a horizontal line representing the intersection of GP and the picture plane (PP).

The distance from GL to the horizon line (HL) is equal to the height of the station point (SP) above GP.



- The cone of vision describes the sight lines radiating outward from SP and forming an angle with CAV in linear perspective. The cone of vision serves as a guide in determining what is to be included within the boundaries of a perspective drawing.
- A 60° cone of vision is assumed to be the normal field of vision within which the principal aspects of the subject should be placed.
- To minimize distortion of circles and circular shapes, they should fall within a 30° cone of vision.
- A 90° cone of vision is acceptable for peripheral elements.
- Remember that the cone of vision is three-dimensional even though it is seen as a triangular shape in orthographic plans and elevations. Only a small portion of the immediate foreground falls within the cone of vision. As the cone of vision reaches out to gather in what the observer sees, it widens its field, and the middleground and background become more expansive.

Plan View



VP for ab, cd

b

c

Parallel

PP

VP for ad, bc

SP

HL

VP for ab, cd

VP for ad, bc

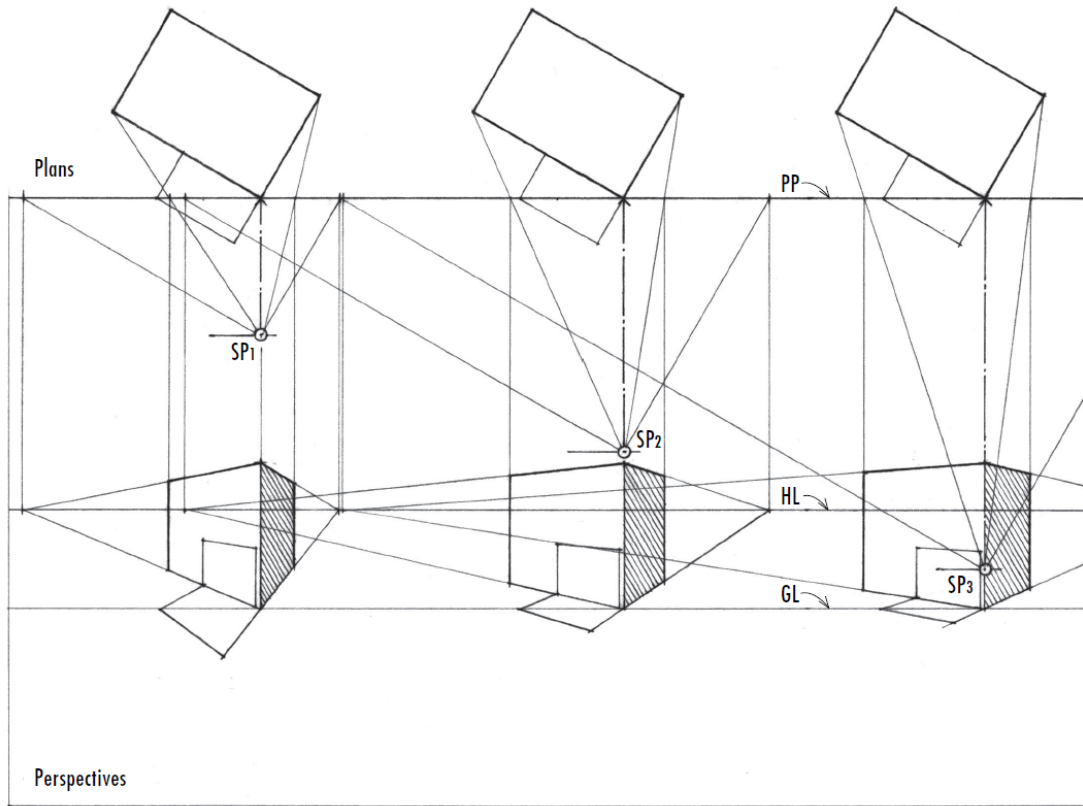
Perspective View



PERSPECTIVE VARIABLES

Distance from the Station Point to the Object

The distance from the station point (SP) to an object influences the rate of foreshortening of the object's surfaces that occurs in the perspective drawing.

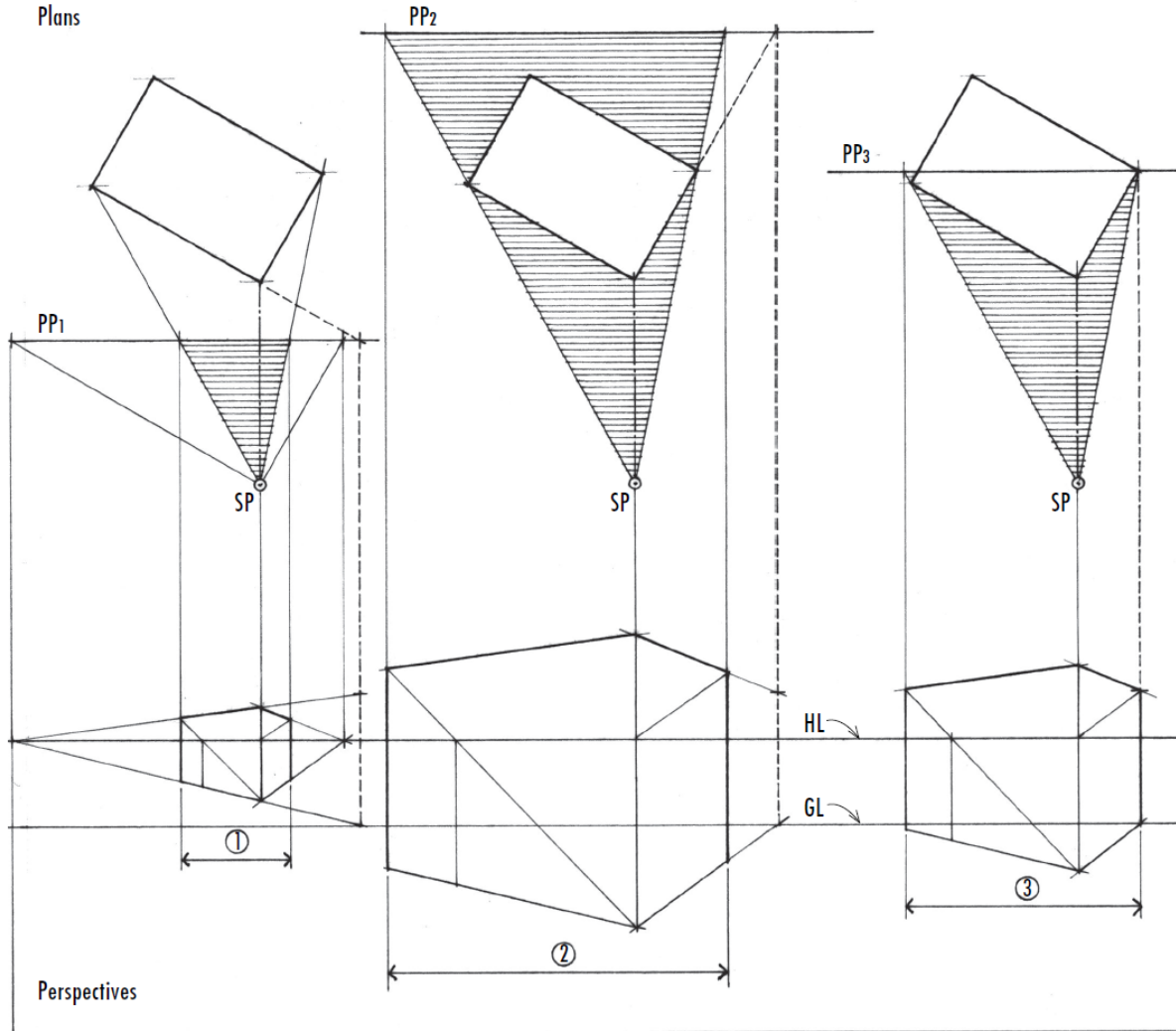


- As the observer's SP moves farther away from the object, the vanishing points for the object move farther apart, horizontal lines flatten out, and perspective depth is compressed.
- As the observer's SP moves forward, the vanishing points for the object move closer together, horizontal angles become more acute, and perspective depth is exaggerated.
- In theory, a perspective drawing presents a true picture of an object only when the eye of the viewer is located at the assumed station point (SP) of the perspective.

PERSPECTIVE VARIABLES

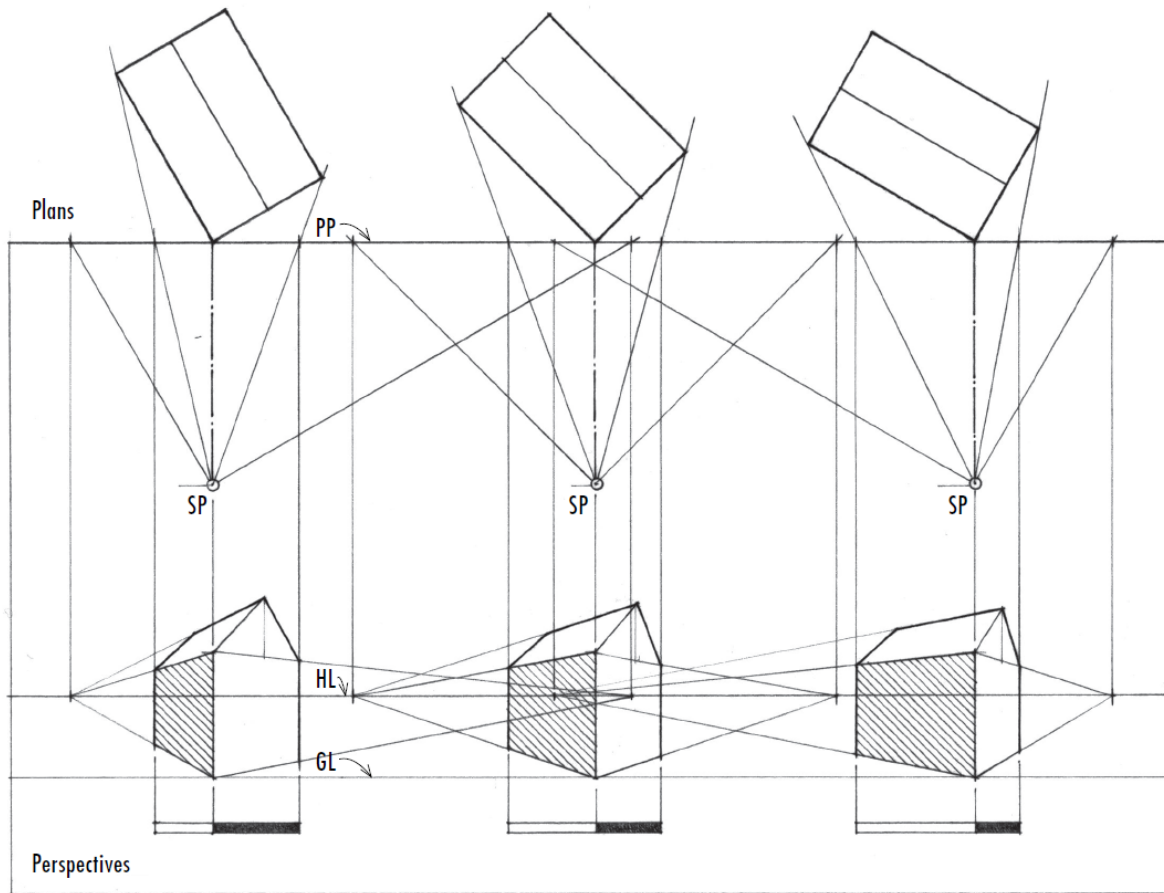
Location of the Picture Plane

The location of the picture plane (PP) relative to an object affects only the final size of the perspective image. The closer PP is to the station point (SP), the smaller the perspective image. The farther away PP is, the larger the image. Assuming all other variables remain constant, the perspective images are identical in all respects except size.



Angle of View

The orientation of the central axis of vision (CAV) and the picture plane (PP) relative to an object determines which faces of the object are visible and the degree to which they are foreshortened in perspective.



• The more a plane is rotated away from PP, the more it is foreshortened in perspective.

- The more frontal the plane is, the less it is foreshortened.
- When a plane becomes parallel to PP, its true shape is revealed.

