*School of Mechanical & Manufacturing Engineering (SMME),*

*National University of Science and Technology (NUST)*

# Engineering Drawing

## Lab Report:

## *Orthographic Projections*

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- **Program**: BE-Aerospace
- **Semester**: 2nd
- **Session**: Spring 2024

# Introduction

For an engineer, engineering drawing is an essential part of design and communication. Isometric drawings are used to communicate a 3D design, however orthographic drawings—which are 2D projections of the isometric view—offer more details about the drawing. The goal of the assignment was to use AutoCAD to draw three orthographic views—top, front, and side—of three isometric drawings provided.

# Tools

## Basic drawing tools

Basic tools such as the line, rectangle, and circle commands etc. were used along with basic features like mirroring, trimming, filleting to create the views.

## Layers

The layer properties allowed for better organization to the drawing by separating different elements of the drawings into different layers. Separated layers were created for:

- Solid lines
- Hidden lines
- Center lines
- Center marks
- Dimensions

and were color coded in order to make the drawings more manageable.

## Snap and Grid setting

The snap and grid setting greatly helped to maintain precision while creating and aligning the views. The settings allowed elements to snap to easy-to-locate points such as midpoints, endpoints, tangents, and angles, allowing for accurate placement and alignment of objects.

## Dimension Style

This tool allowed aspects of the dimensions such as text and arrows size, appearance, and color to be adjusted It brought neatness to the final look of the views, as well as helped to ensure consistency throughout the drawings.

## Drawing 01:

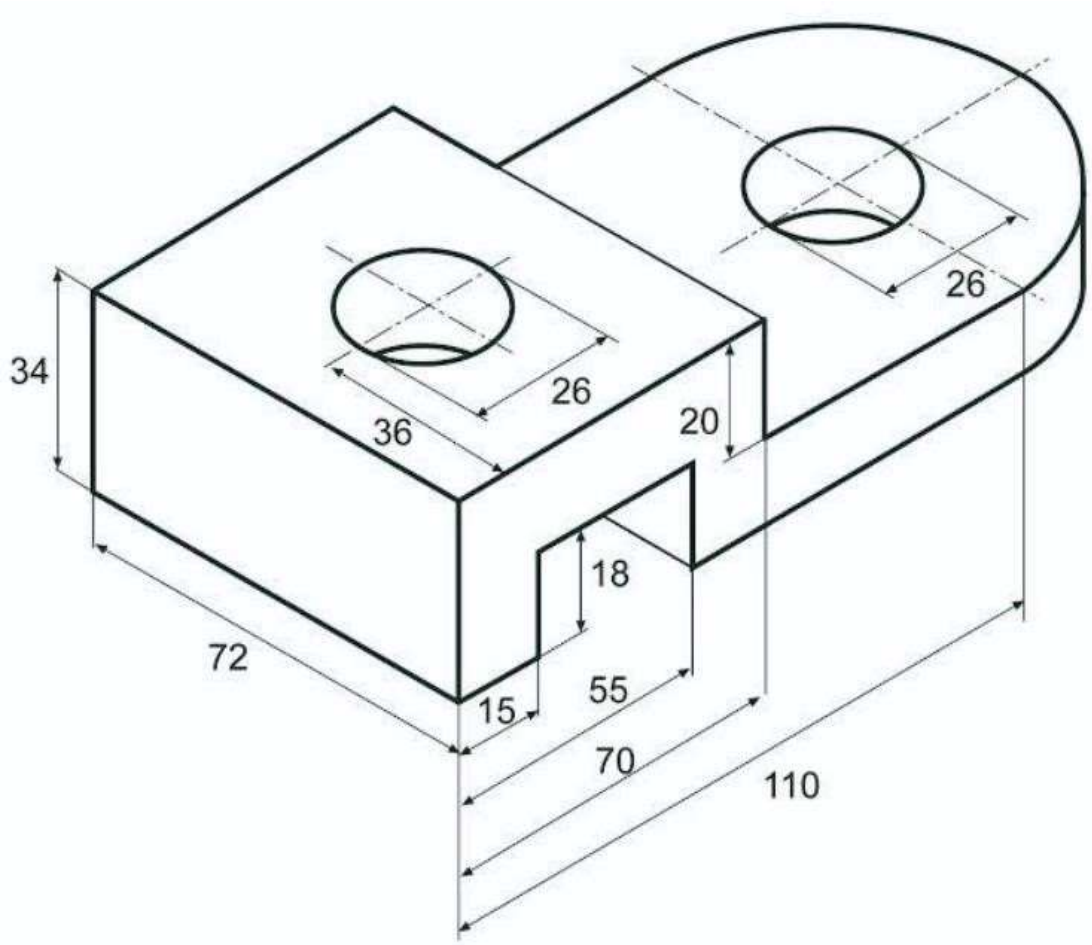



*Figure 1:Drawing 1*

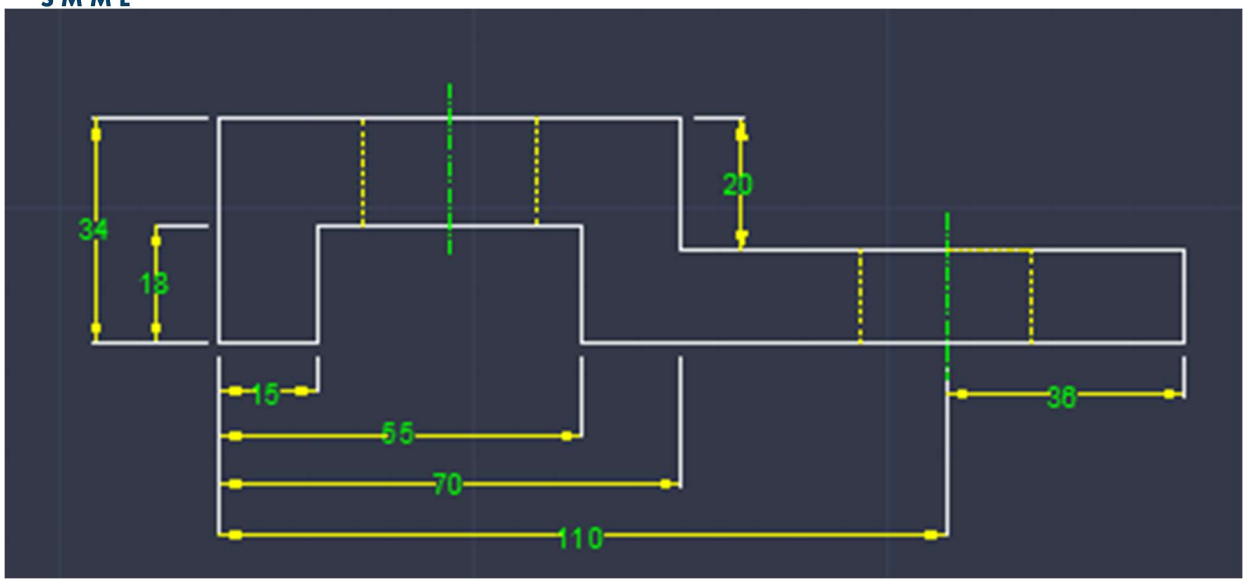



*Figure 2: FRONT VIEW*

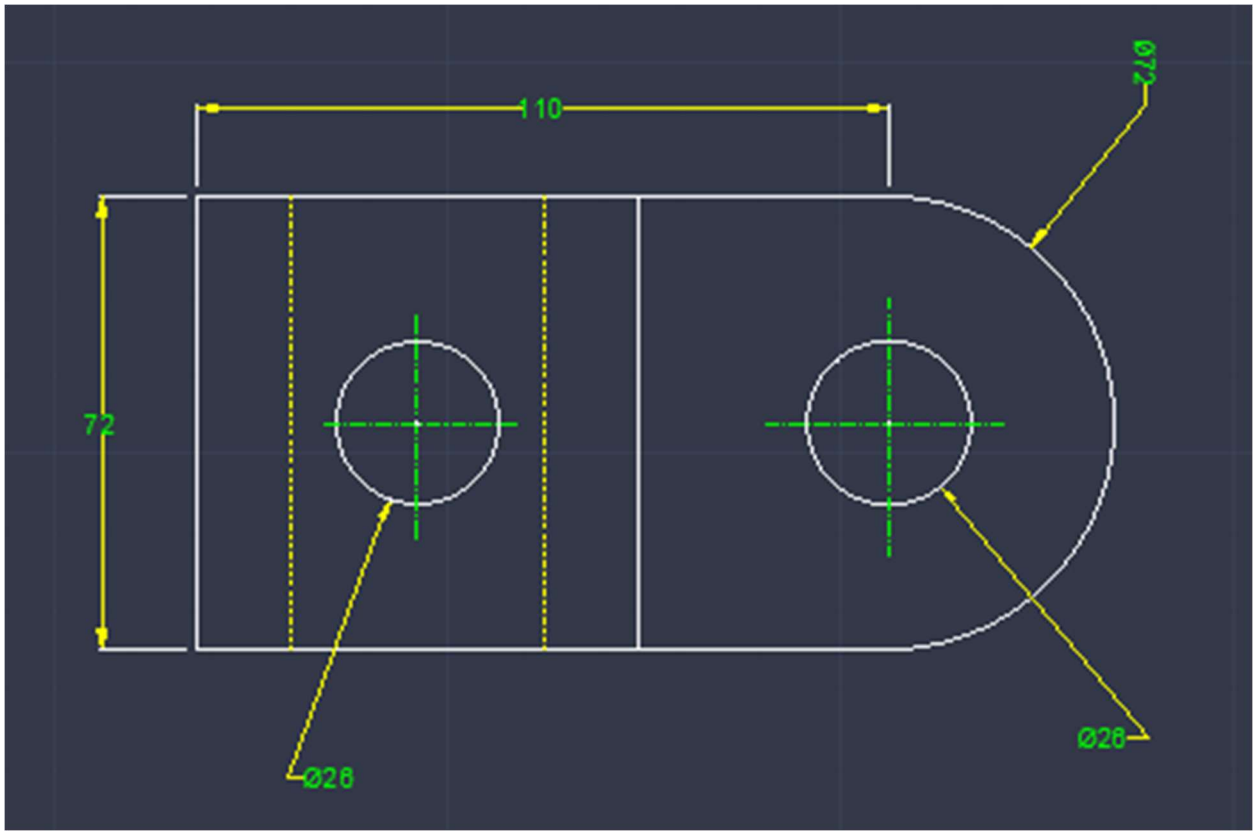



*Figure 3: TOP VIEW*

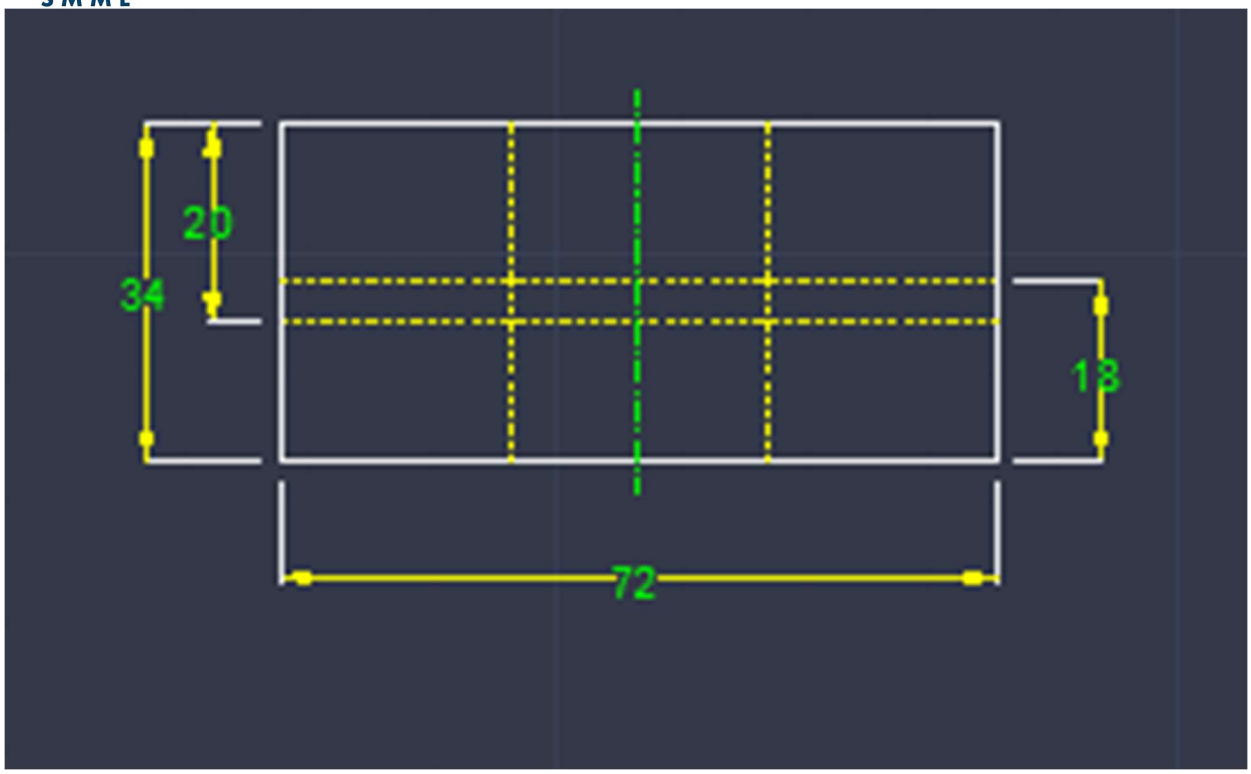



*Figure 4:LEFT SIDE VIEW*

# Drawing 02:

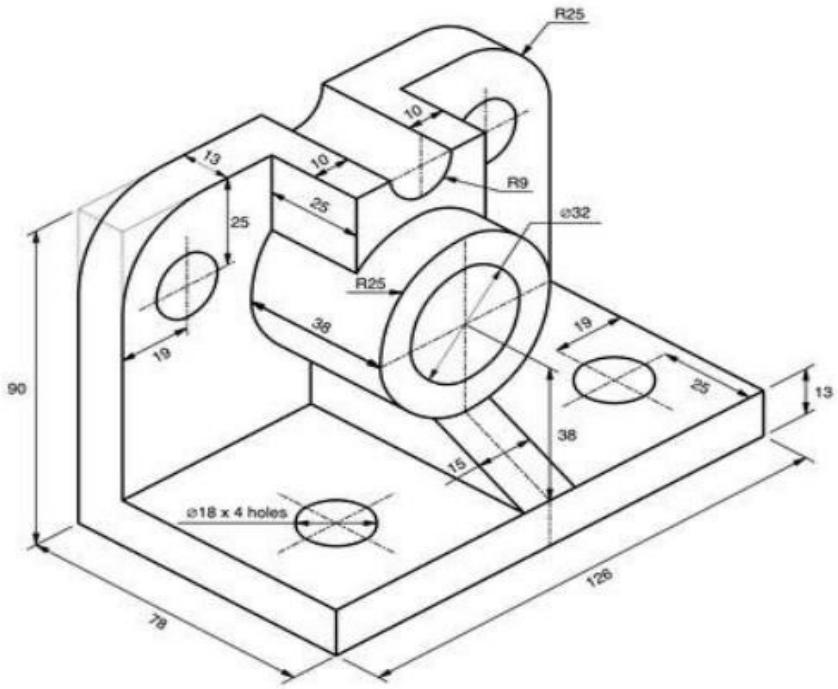



*Figure 5:Drawing 02*

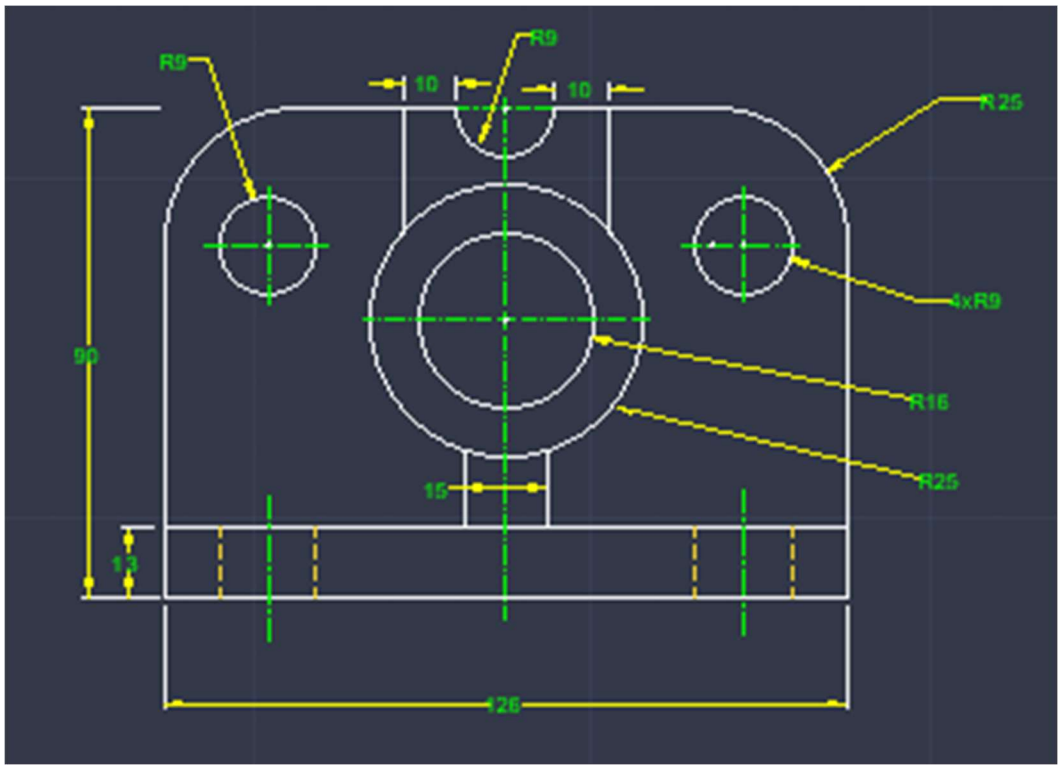



*Figure 6: FRONT VIEW DRAWING 02*

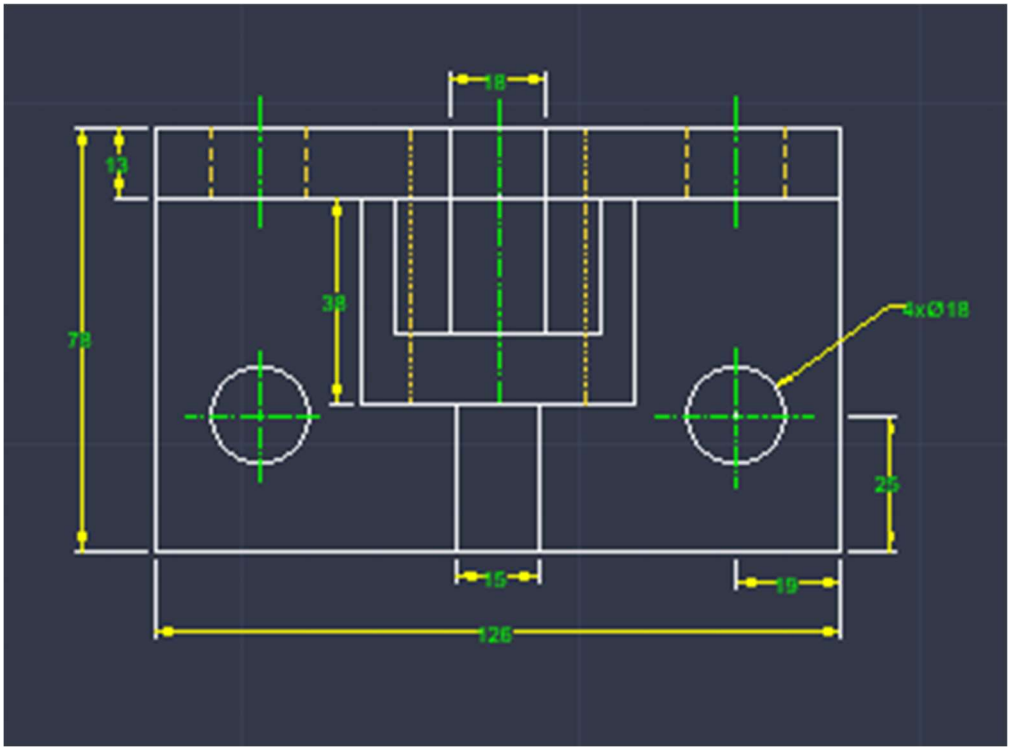
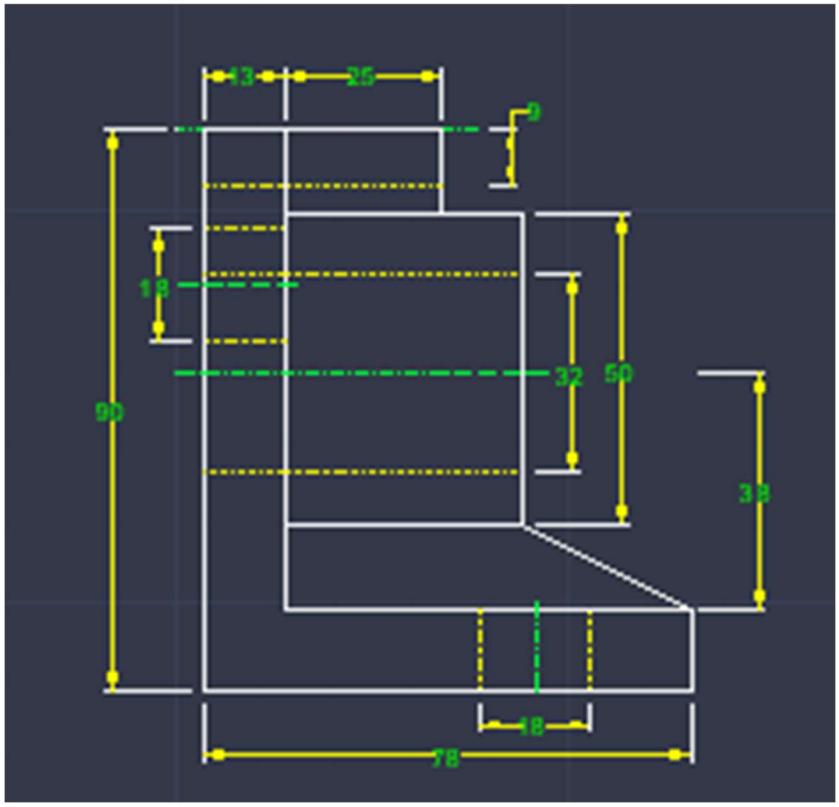
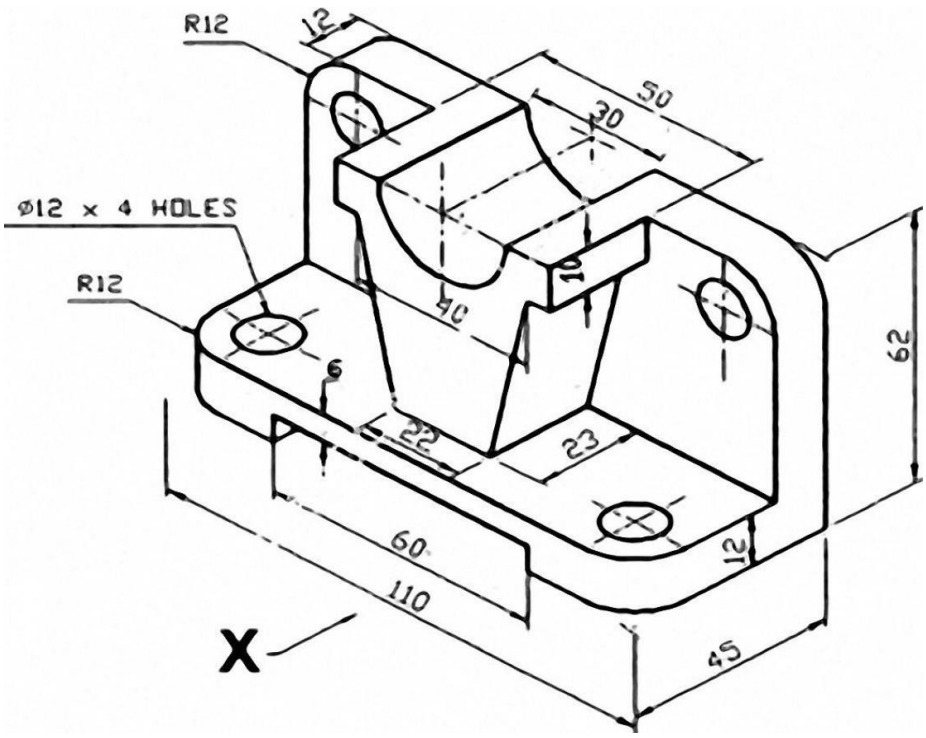



*Figure 7:TOP VIEW*


13
25
9
18
32
50
90
38
18
78

**Drawing 03:**


R12
12
50
30
Ø12 x 4 HOLES
R12
40
11
62
6
22
23
60
110
12
45
X

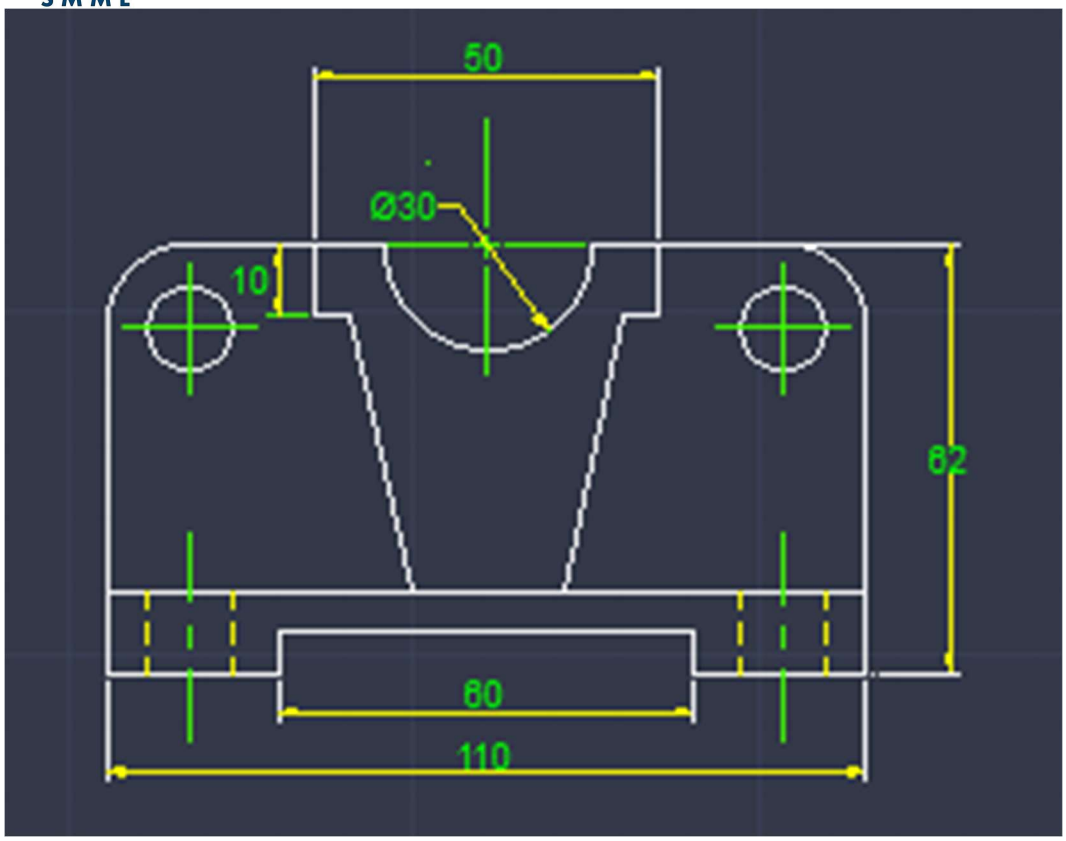



*Figure 8:FRONT VIEW*

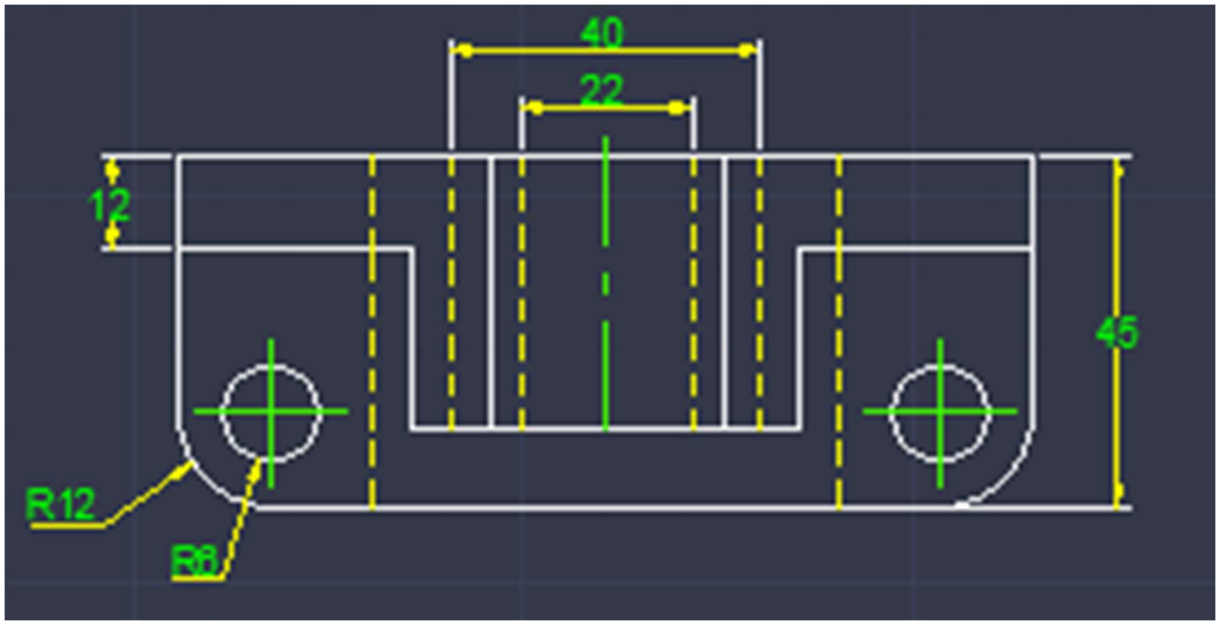



*Figure 9:TOP VIEW*

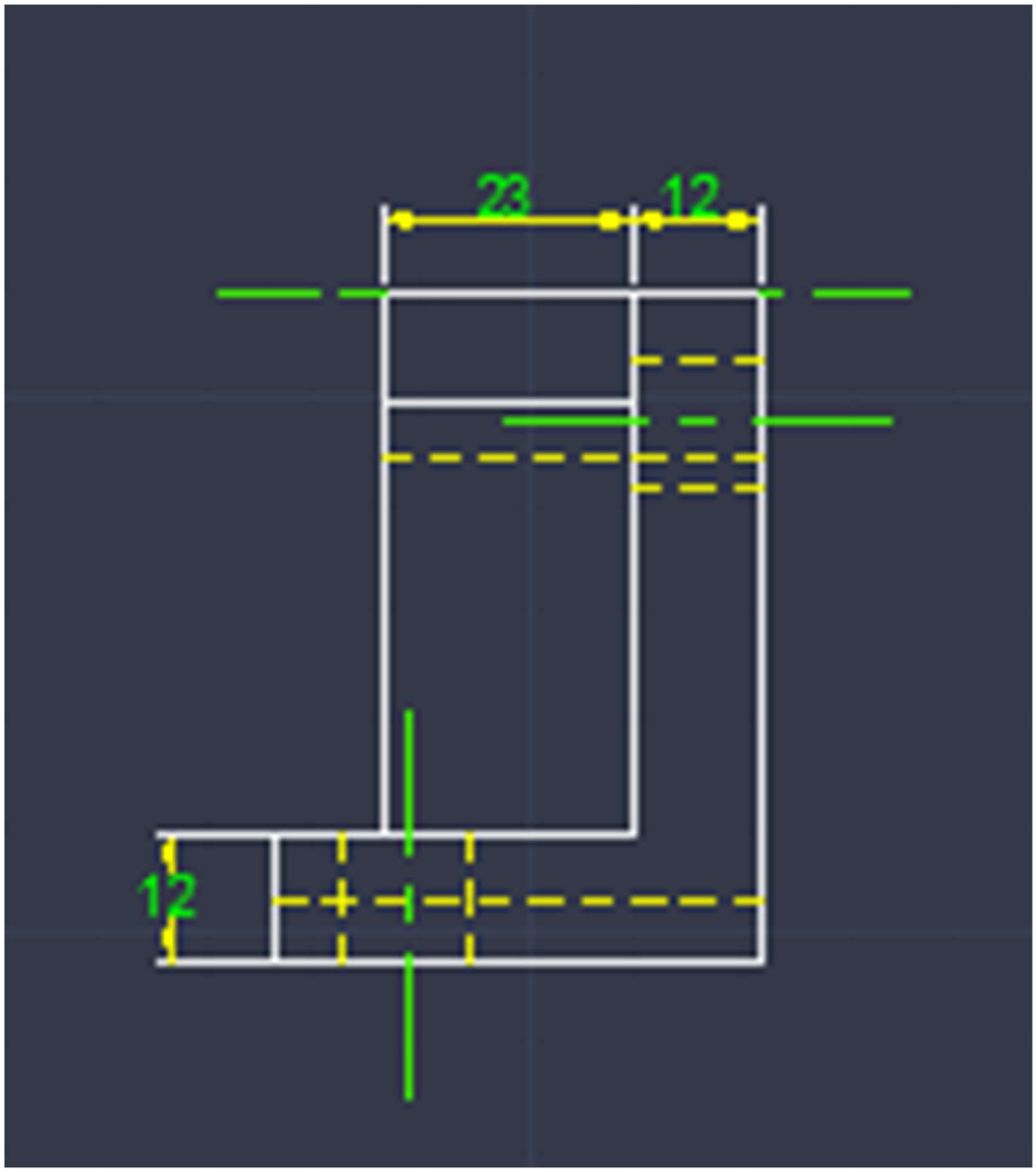



*Figure 10:RIGHT SIDE VIEW*