



School of Mechanical & Manufacturing Engineering,
National University of Sciences and Technology (NUST),
Sector H-12, Islamabad.

Name: **Bashayer Amjad**

CMS ID: **466710**

AE-01

Assignment

Engineering Drawing & Graphics (AE-103)

Program: BE Aerospace

Session: Spring 2024

Semester: 2nd

Submitted to: Lab Engr Laiba Waheed

Objective

Create detailed and dimensioned orthographic projections of three objects in AutoCAD.

Abstract

This report details the creation of orthographic projections for three objects using AutoCAD software in the first angle projection system. The objectives were to apply theoretical knowledge of orthographic projections to a practical setting, develop proficiency in AutoCAD for creating technical drawings, and enhance skills by presenting clear and dimensioned views.

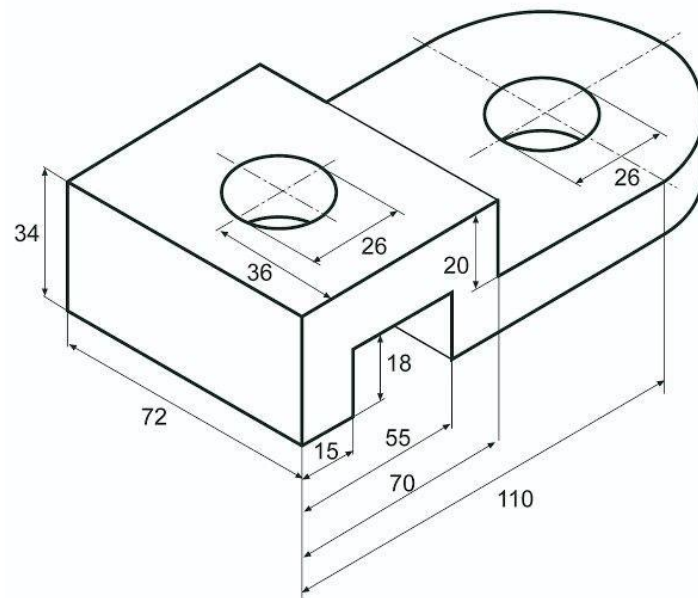
Introduction

Orthographic projections are a fundamental concept in engineering drawing, providing a means to represent three-dimensional objects through a series of two-dimensional views. These views, typically consisting of a front, top, and right side, allow for the complete visualization and understanding of an object's geometry and dimensions. Mastering orthographic projection is crucial for engineers and designers to effectively communicate design intent, facilitate manufacturing processes, and ensure product functionality.

The first angle projection system is a standardized method for generating orthographic projections. In this system, the object is positioned between the viewer and the projection planes (front, top, and right side). The object's geometry is then projected perpendicularly onto each plane, resulting in the three distinct views. Each view represents a specific face of the object, revealing its true size and shape.

Hidden lines, lines representing features obscured from the viewer's perspective in a particular view, are depicted with dashed lines to provide additional clarity and understanding of the object's overall form.

Object 1



Drawing:

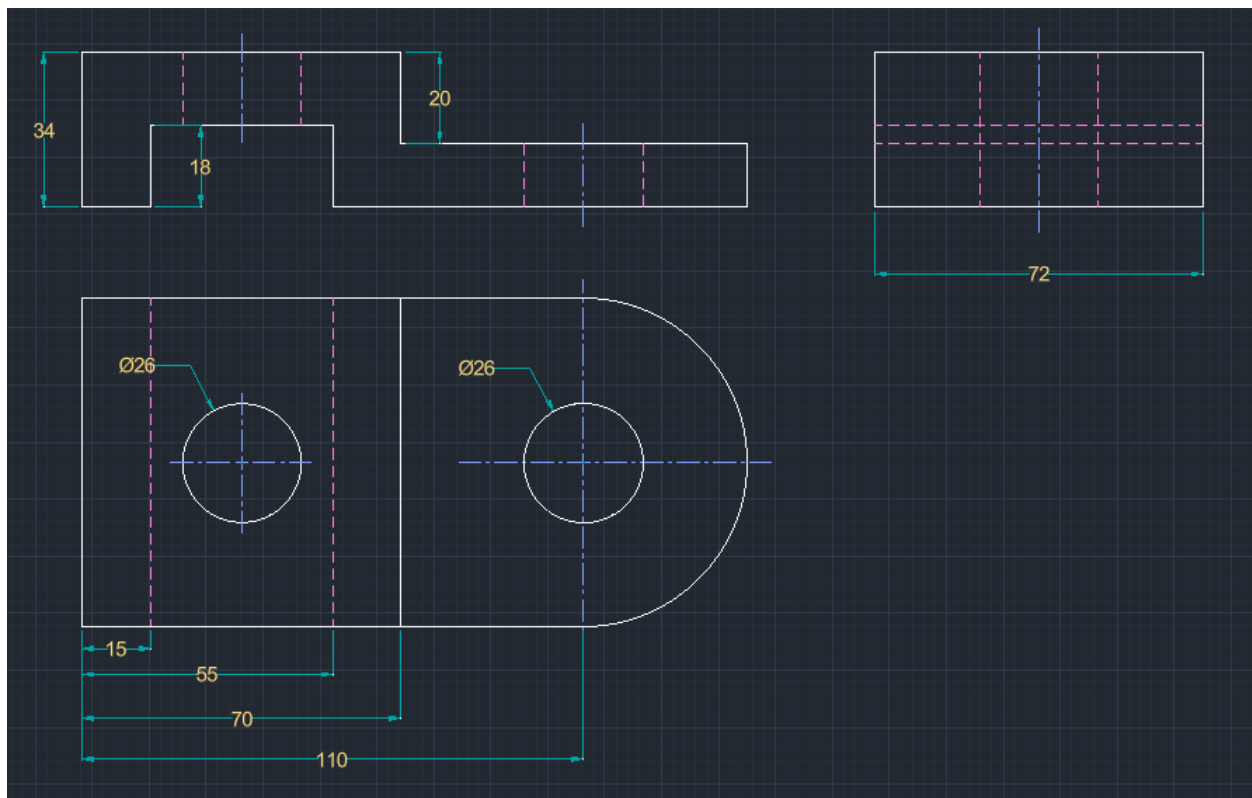


Figure 1: Drawing 1

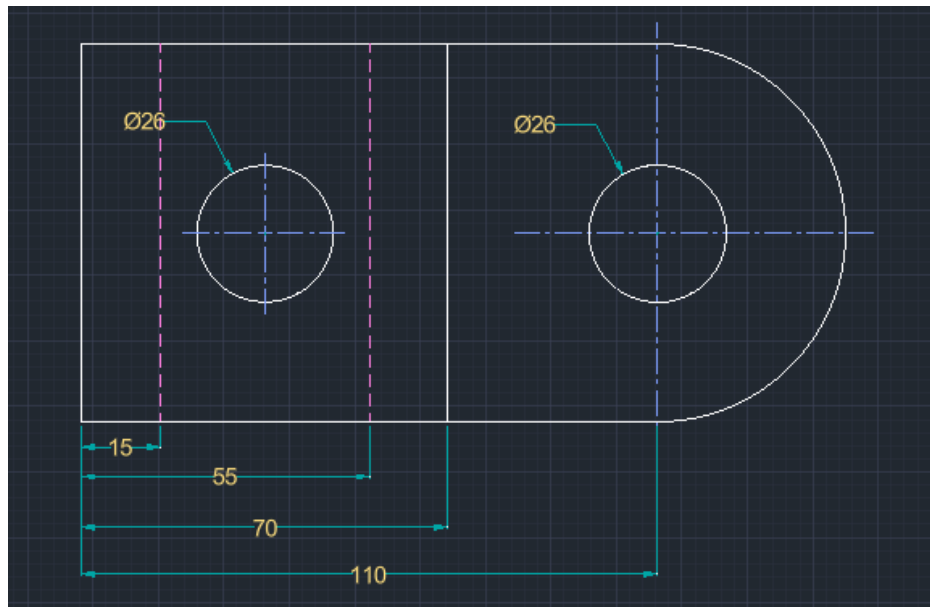


Figure 2: Top View Drawing 1

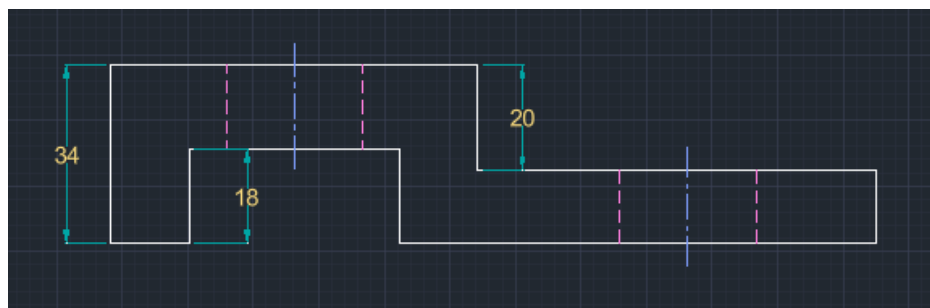


Figure 3: Front View Drawing 1

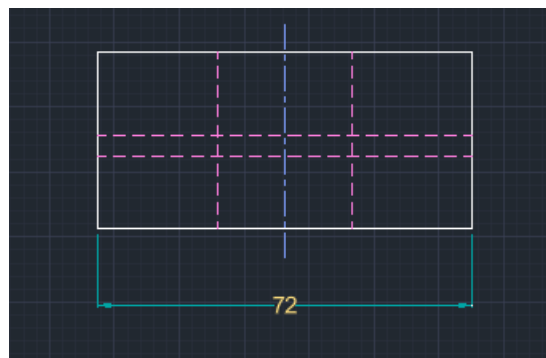
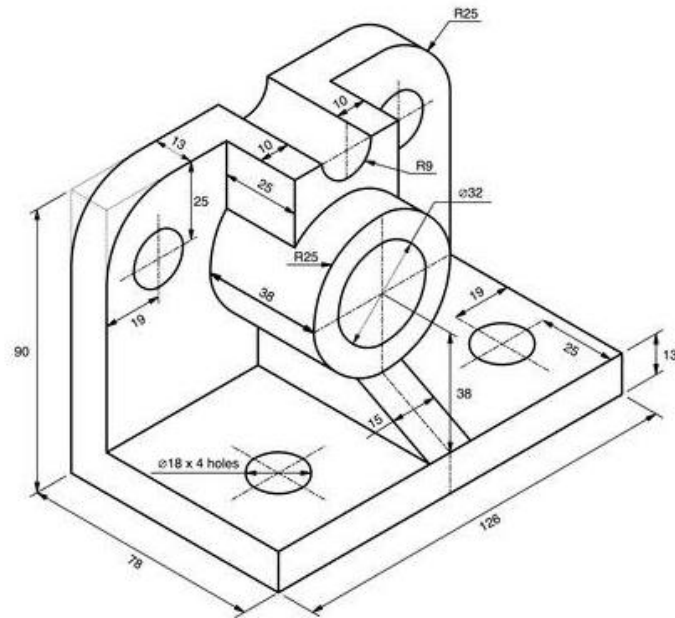


Figure 4: Left View Drawing 1

Object 2



Drawing:

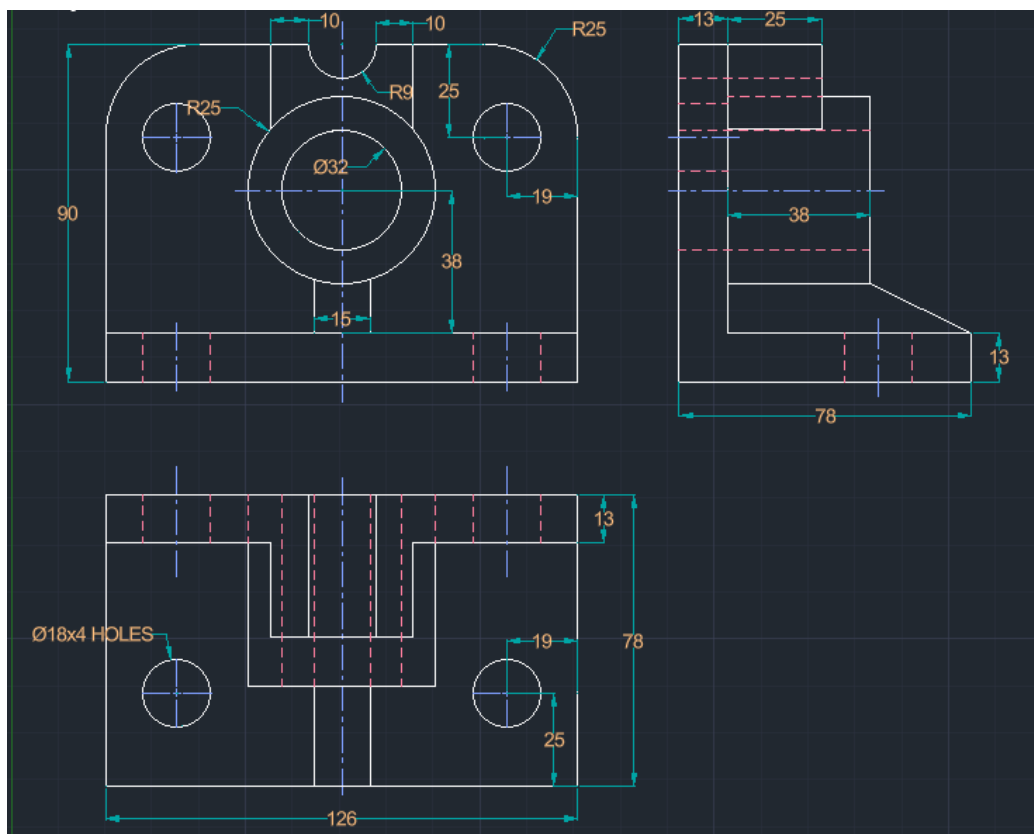


Figure 5: Drawing 2

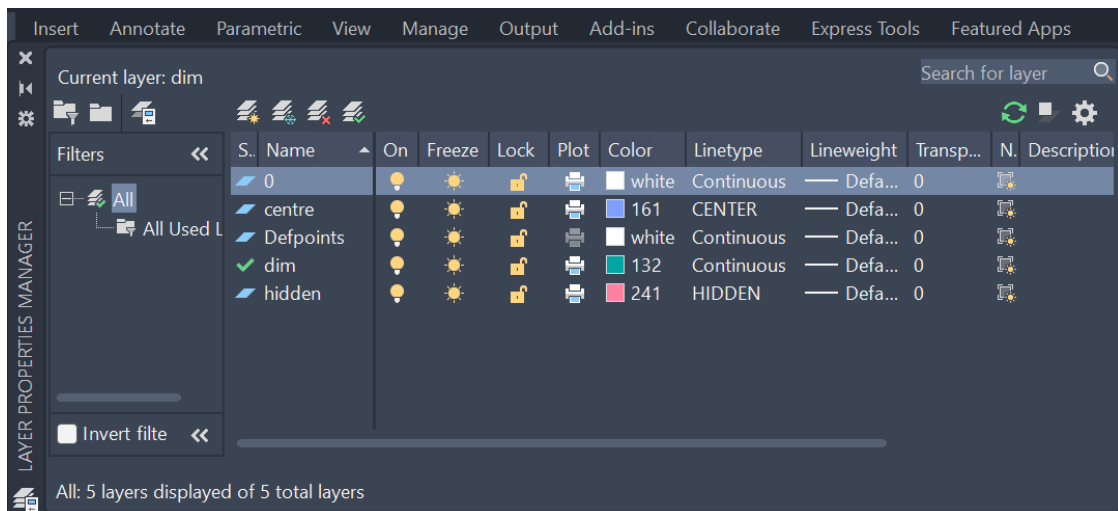


Figure 6: Different Layers (for dimensioning, hidden lines etc)

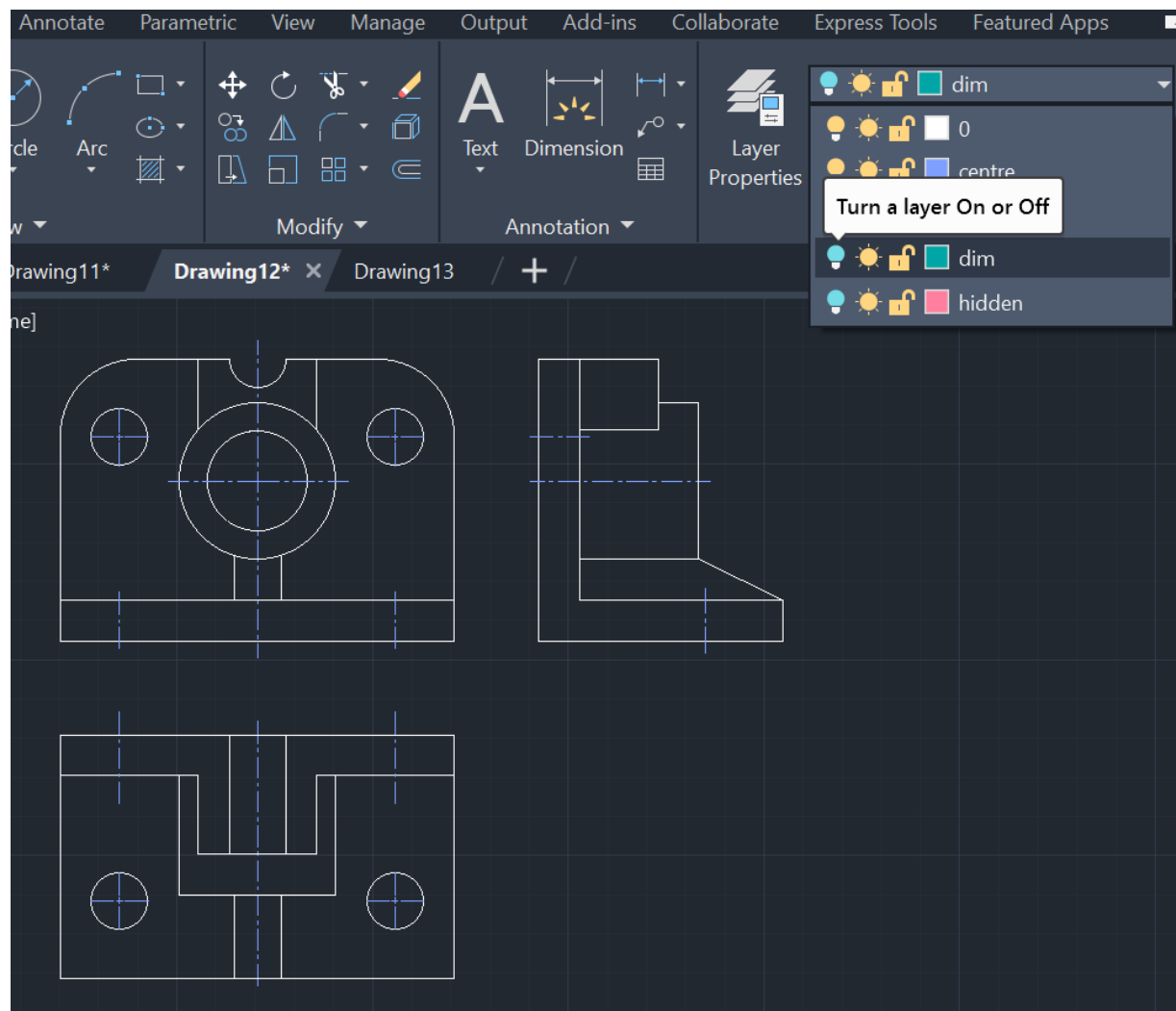
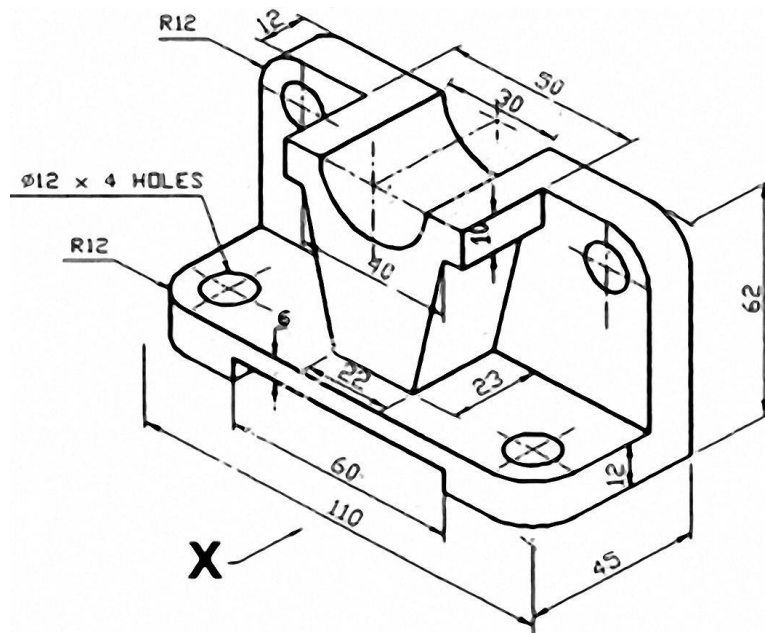


Figure 7: Drawing 2 with dimension and hidden lines layer turned off

Question 3



Drawing:

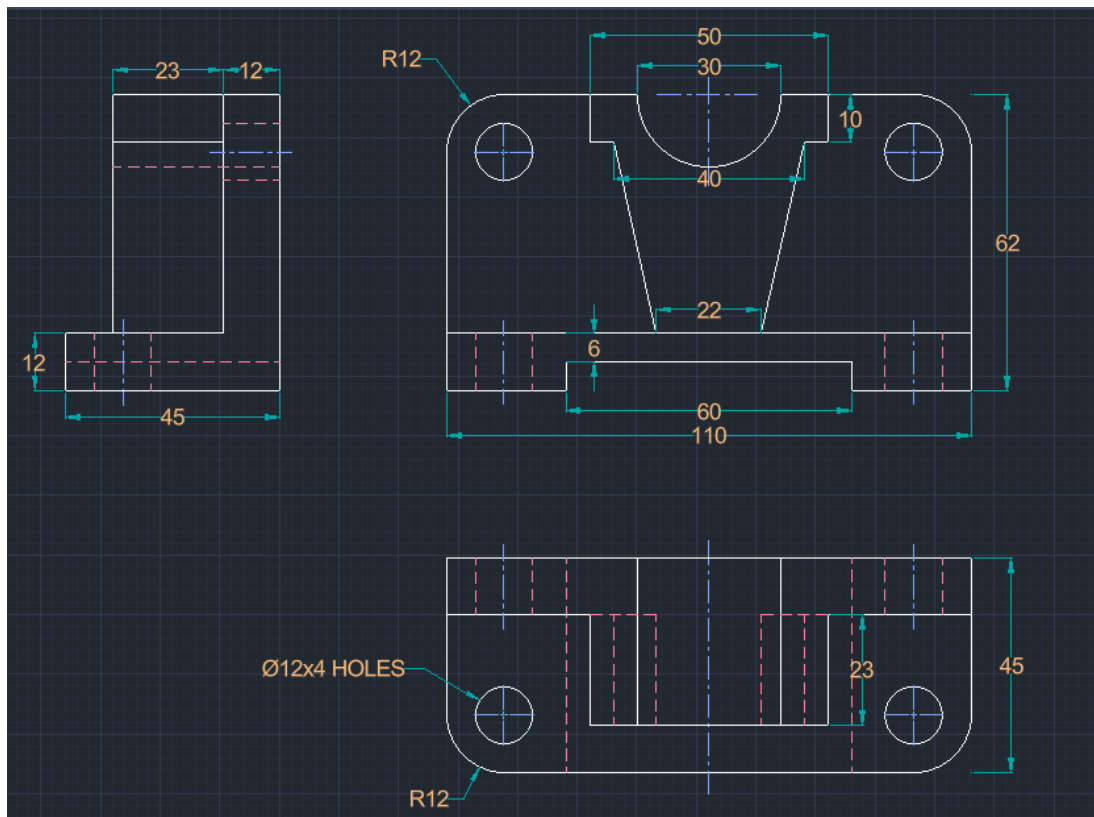


Figure 8: Drawing 3