

COMPUTER AIDED DRAWING

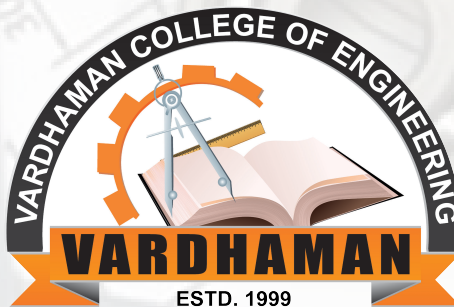
A8302

Experiment No. 2

Geometrical Modeling - II

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Group Name

I B.Tech I Semester

CSE

VARDHAMAN COLLEGE OF ENGINEERING

(AUTONOMOUS)

Affiliated to JNTUH, Approved by AICTE, Accredited by NAAC with A++ Grade, ISO 9001:2015 Certified
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Geometrical Constructions - II

1 Objectives

- To practice the commands to get proficiency in using AUTOCAD, a widely used computer-aided design (CAD) software.
- To gain a better understanding of fundamental geometric concepts like circles, polygons, fillet, offset, trim, array and their properties.
- To interpret and implement geometric designs based on given dimensions and specifications.
- To Develop technical skills in creating, editing, and manipulating geometric shapes and objects within AUTOCAD.
- To apply problem-solving skills to accurately replicate geometric models as per provided dimensions.

2 Aim

Construct the following geometric models in AUTOCAD as per the given dimensions.

3 Software Used

- AUTOCAD

4 System Requirements

1. **System Type:** Windows 10 64 Bit Operating System
2. **Processor:** i3
3. **RAM:** 4 GB

5 Commands Used

1. Limits
2. UCSICON
3. units

4. line
5. fillet
6. move
7. text
8. mirror
9. offset
10. layers
11. chamfer
12. circle
13. array
14. Dimlinear
15. Dimradius
16. Dimdiameter

6 Experimental procedure

1. Open the file with name *Template.dwg* from the downloads folder and edit the title block. update the details like name, roll number, class, date, title of the experiment.
2. Perform initial commands like units, ucsicon and limits.
3. In the limits set the A4 sheet dimensions 297x210.
4. Click zoom → All
5. Turn off the Grid display by pressing F7 key.
6. Switch on the object snap, ortho and object Tracking by pressing F3, F8 and F11 keys.
7. To draw a line, click Home → Draw → Circle on the ribbon, or enter circle or c in the command prompt.
8. Follow the prompt sequence given next.
 - (a) Command: circle → Specify center point for circle → Specify radius of circle: 30
 - (b) Command: circle → Specify center point for circle → Specify radius of circle: 20
 - (c) Command: m (MOVE) → Select objects: 1 found → Select objects: → Specify base point or [Displacement] <Displacement>: → Specify second point or <use first point as displacement>: 129

- (d) Command: PO (POLYGON) → Enter number of sides <6>: 6 → Specify center of polygon or [Edge]: → Enter an option [Inscribed in circle/Circumscribed about circle] <I>: c → Specify radius of circle: 20
 - (e) Command: POL (POLYGON) → Enter number of sides <5>: 5 → Specify center of polygon or [Edge]: → Enter an option [Inscribed in circle/Circumscribed about circle] <C>: i → Specify radius of circle: 15
 - (f) Command: line (draw a line from the center of the two circles)
 - (g) Command: o (OFFSET) → Specify offset distance or [Through/Erase/Layer] <Through>: 10 → Select object to offset: click above the line → Select object to offset: click below the line → Select object to offset or [Exit/Undo] <Exit>: *Cancel*
 - (h) Command: o (OFFSET) → Specify offset distance or [Through/Erase/Layer] <Through>: 5 → Select object to offset: click above the line → Select object to offset: click below the line → Select object to offset or [Exit/Undo] <Exit>: *Cancel*
 - (i) Command: f (FILLET) → Select first object or [Undo/Polyline/Radius/Trim/Multiple]: r → Specify fillet radius < >: 10 → perform to all four corners.
 - (j)
9. using dimension linear command give the dimensions as per the drawing
10. Save the file in local disk D or E in the following path D:23881A0501/experiment 1.

7 Result

The geometric models are analyzed and drawn in the AUTOCAD.

8 Outcomes

- Successfully created the geometric models as specified in the given dimensions and instructions.
- Able to demonstrate the ability to interpret and apply dimensional information in a CAD environment.
- Able to develop problem-solving skills by resolving challenges that may arise during the construction of geometric models.
- Able to document the work effectively, including annotations, dimensions, and relevant notes within the AUTOCAD environment.
- Able to present completed models to peers or instructors, fostering communication and presentation skills.

9 Models

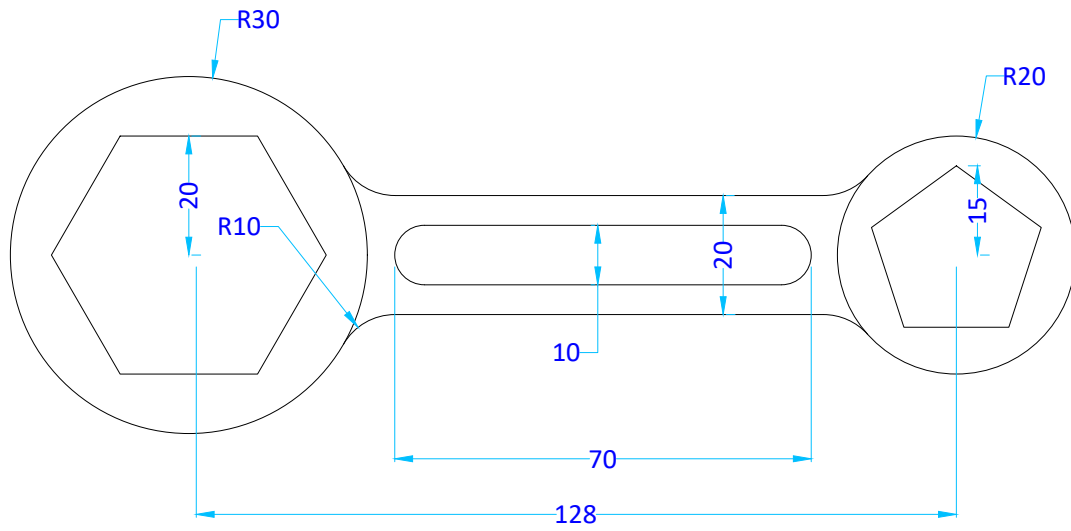


Fig. 1

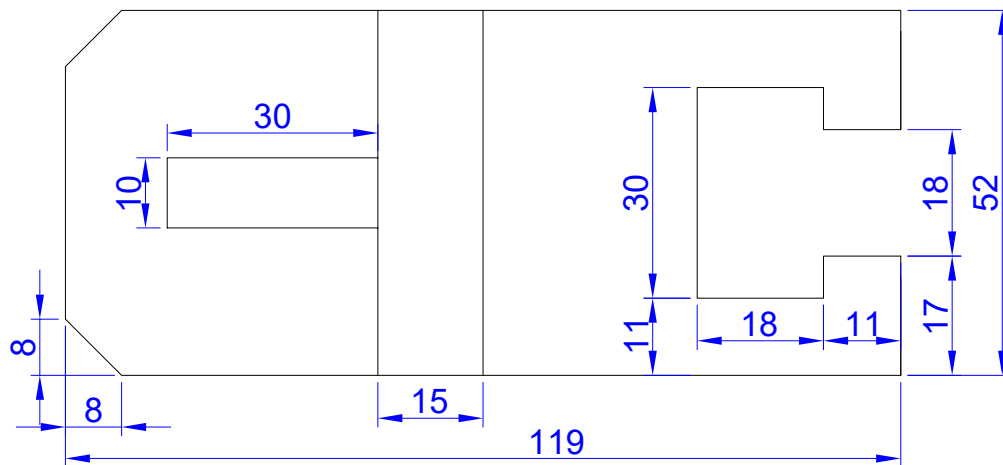


Fig. 2

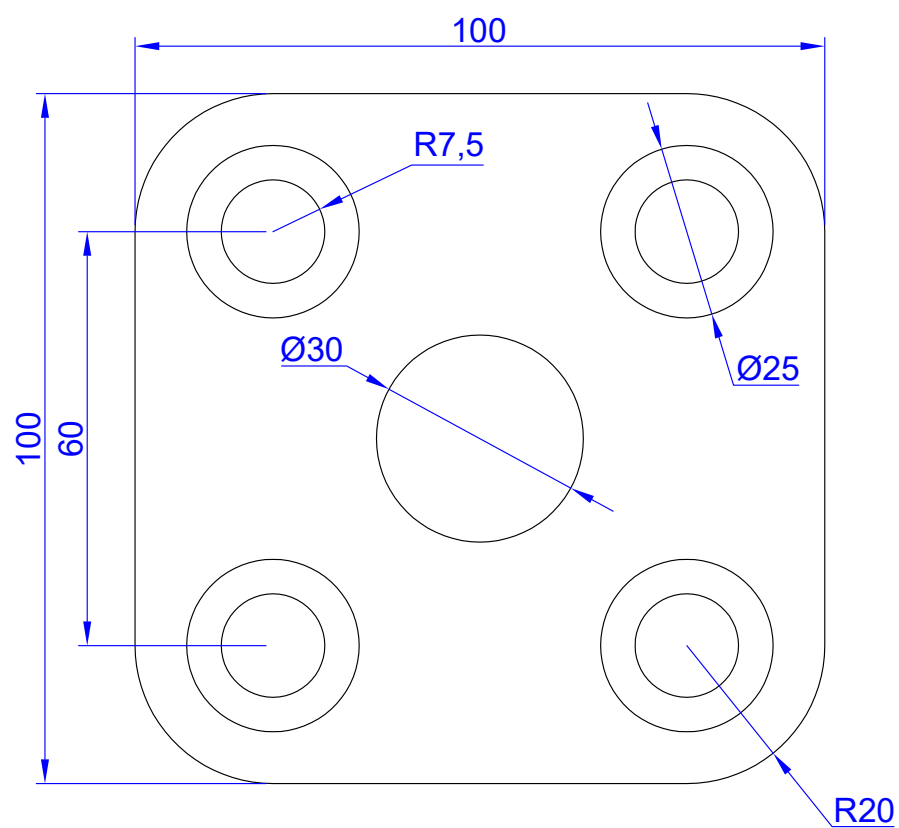


Fig. 3

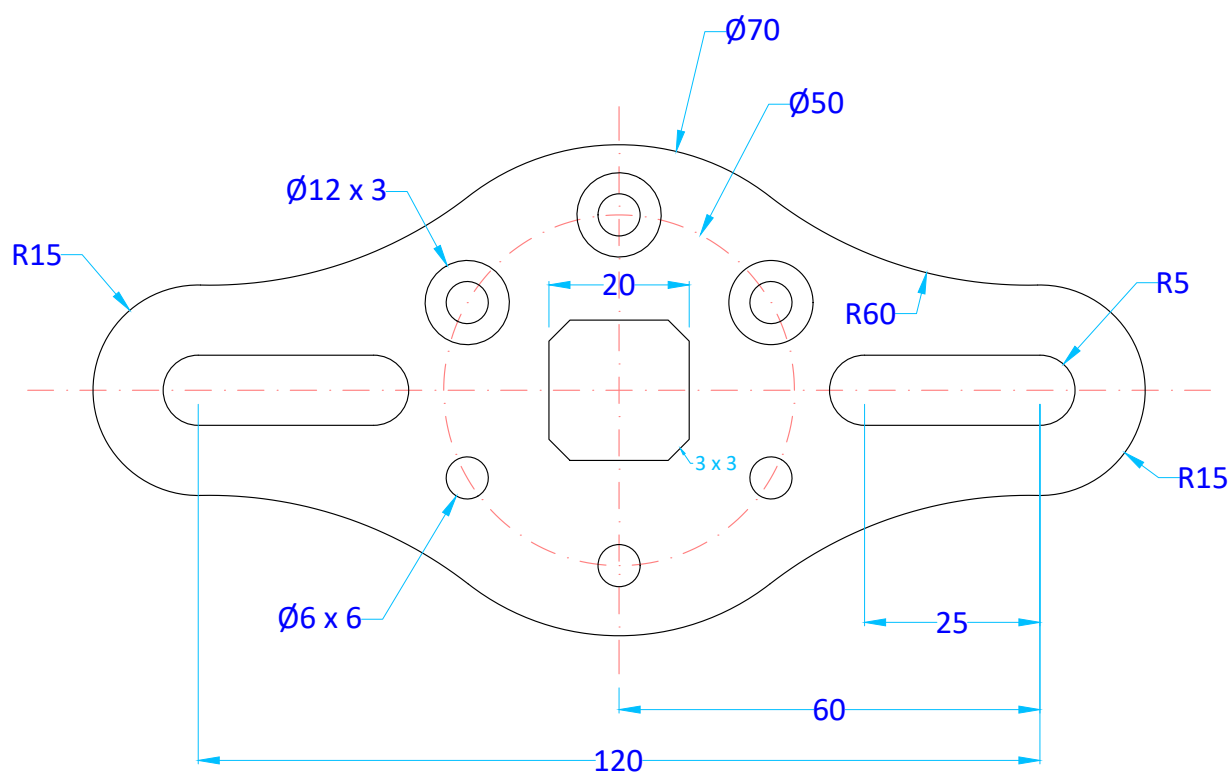


Fig. 4