SRM Institute of Science and Technology
College of Engineering and Technology
Department of Mechanical Engineering

18MES101L - Engineering Graphics and Design

Reg. No	RA2011031010006	**Ex. No**	5
Name of the student	Anas Ahmed Ather	**Week. No**	6
Department	CSE (IT)	**Title of the exercise**	**Projection of Solids - 1**
Section	T1	**Date**	

Regular class problems

1. A cube of side 40mm rests on the ground on one of its faces with a vertical face inclined at 40° to the wall. Draw its projections (2 Marks).

2. A square prism of base side 35 mm and axis length 60 mm lies on the ground on one of its longer edges with its faces parallel to the wall. Draw the projections (2 Marks).

3. A hexagonal prism of base of side 30mm and axis 60mm rests on the ground on its base with a base side parallel to wall. Draw the projections of the prism and determine the true length of its longest diagonal (2 Marks).

4. Draw the front, top and right side views of a pentagonal prism of base side of 20 mm axis 35 mm when it is resting on the floor on its base with one of the edges of the base inclined at 30° to the wall (2 Marks).

Extra problems for practice

1. A right rectangular prism of side 35 X 20 mm and axis length 60 mm lies on the ground on its base with a longer base edge parallel to wall. Draw the projections.

2. A cube of side 40mm rests on the ground on one of its faces with a vertical face equally inclined to the wall. Draw its projections.

3. A square prism of base side 35 mm and axis length 60 mm lies on the ground on one of its longer edges with its faces equally inclined to the wall. Draw the projections when its axis is inclined at 30^0 to the wall.

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1. **Exercise : 5** 2. **Date:** 13 Nov. 2020

3. **Title** : Projection of solids.

4. **Aim** : To draw the orthographic multi-view projection of solid prisms/ cylinders. pyramids/ cones.

5. **Software used:** Auto CAD

6. **Introduction:** Prisms and Cylinders:

→ A Prism is named by the shape of its base. A rectangle prism has a rectanglar base and hence a rectangle cross-section. A triangular prism has a triangular base and hence a triangular cross-section.
A cylinder has a circular base & hence a ~~cylinder~~ circular cross-section.

6.1 Terminology (pyramid with sketch):

→ A pyramid is a polyhedron formed by connecting a polygonal base and point, called the apex. Each base edge and apex ~~from~~ form a triangle, called a lateral face. It is a conic solid with polygonal base.

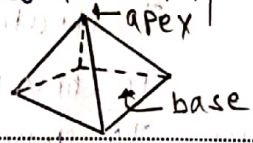
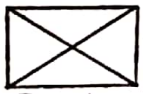


Fig.

6.2 Real time example - Picture



Top view

Side view

Front view

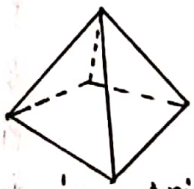


Fig. isometric view

7. **Procedure** (for solving question #):

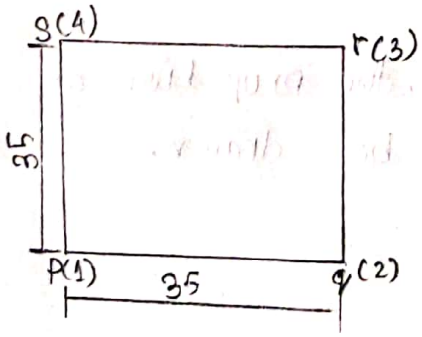
7.1 Question outline : projection of the square prism.

7.2 Object : Square prism.

7.3 Resting on Conditions :

7.4 Other resting condition (if any) :

7.5 Other condition (if any) :



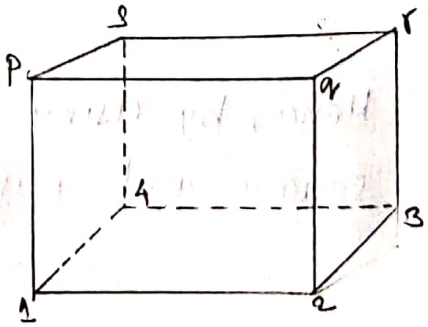


Fig. Free hand sketch of the solution to question #

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7.6 Procedure:

Step 1.
Select the 3-D modeling mode from setting then set unit, limit and zoom all the layout.

Step 2:- Draw the box with dimension 35 mm.

Step 3:- Using Extrude command give the box height 60 mm.

Step 4:- Change the angle setting to first projection.

Step 5:- Click on model space & select the object.

Step 6:- Take the selected object to new layout & put all the 4 views.

Step 7:- Label the objects & provide the dimension of the object.

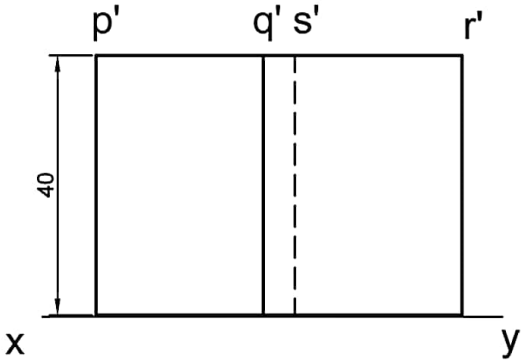
8. Commands used:

S.N.	Command	Use
1.	UNITS	To specify units, precision.
2.	LIMITS	To set drawing area & grid
3.	ZOOM	To increase & decrease the size
4.	Box	To create 3D solid box / cube
5.	Extrude	To convert 2D object into 3D
6.	Model space	To generates the different views.
7	Line	To create straight line
8.	Text	To write text.
9.	DIM	To Accesses dimensioning.
-	-	-
-	-	-

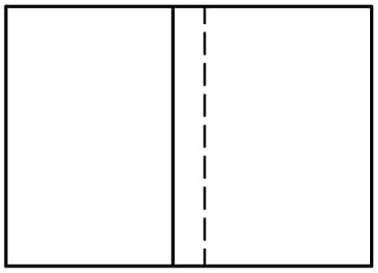
9. Result:

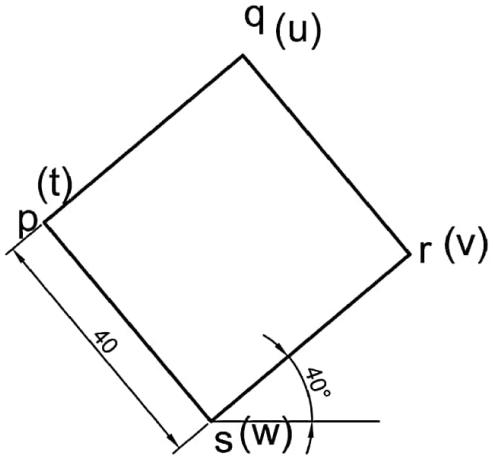
Hence, by using AutoCAD, the projection of square and prism can be drawn.

Faculty Name		Date of Submission	
Signature		Marks	

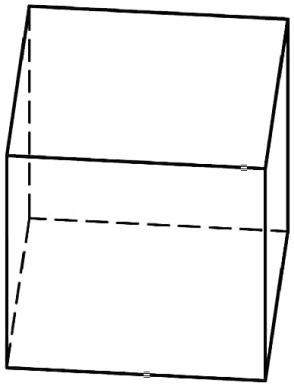


FRONT VIEW





TOP VIEW



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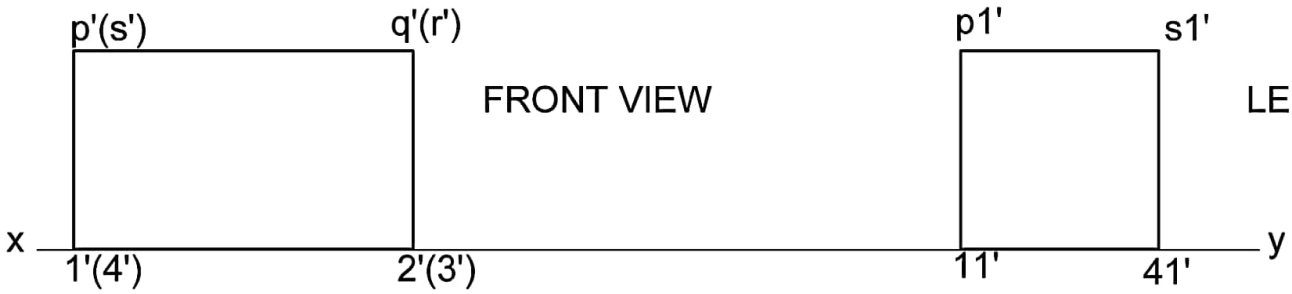
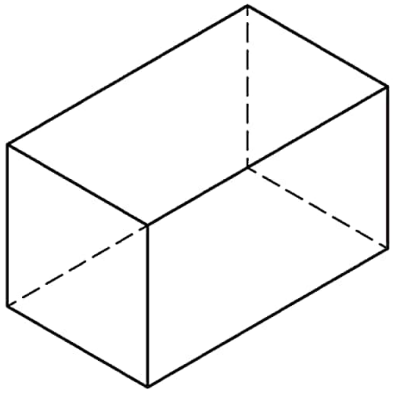


TOP VIEW



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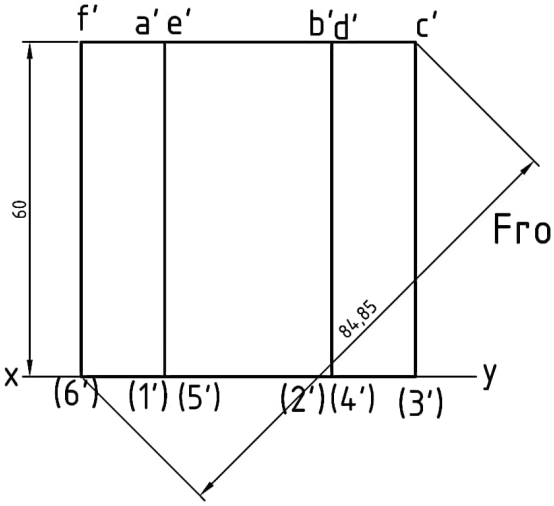
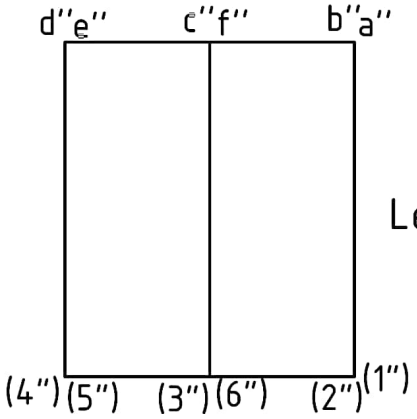
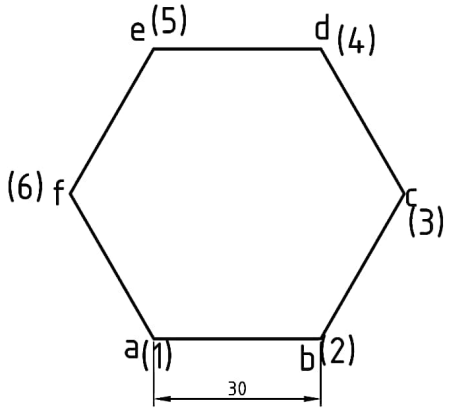


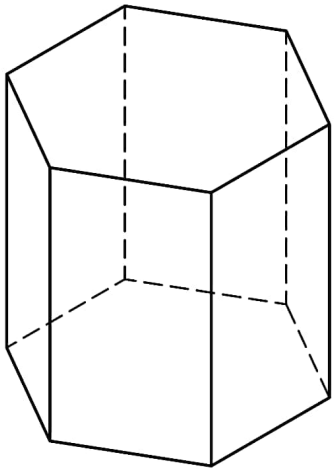
Front view



Left side view



Top view



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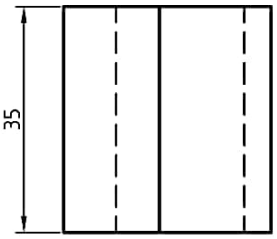

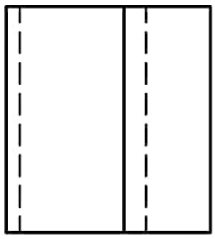

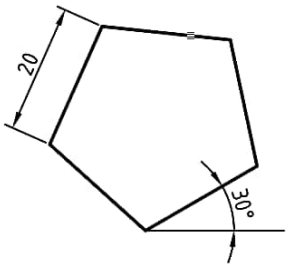

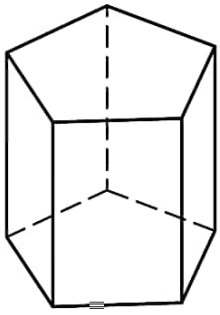

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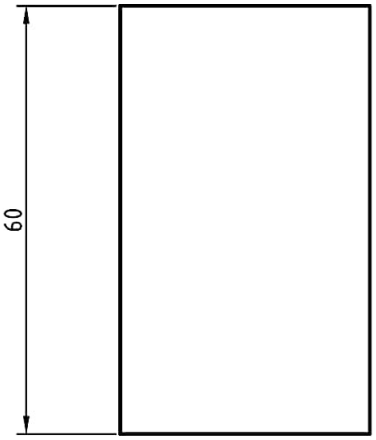

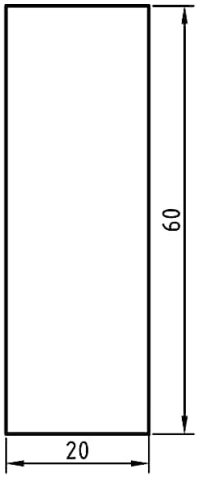

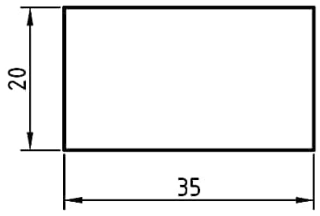

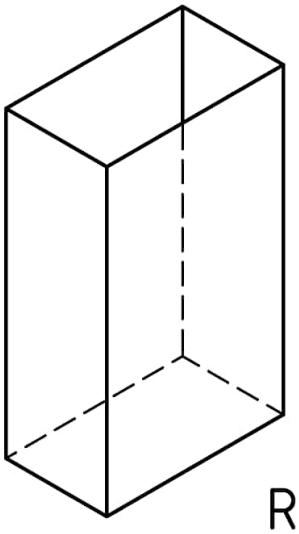

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