

Subject: Basic Technology

Year/Level: 10

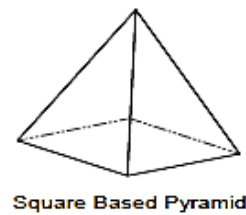
Strand	BT10.5 GEOMETRICAL DRAWING
Sub Strand	BT 10.5.4 PYRAMIDS AND CONES
Content Learning Outcome	BT10.5.4.1 Develop skills in geometrical drawing of truncated pyramids and cones.

LESSON NOTES**Triangular prism**

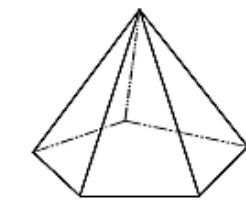
Two triangular bases and three rectangular sides make a triangular prism. It falls in the category of a tetrahedron. It has 3 lateral faces and 2 triangular bases.

THE GEOMETRICAL SOLIDS**Pyramids**

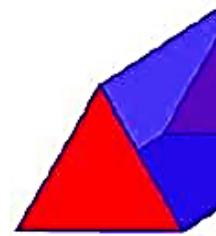
In technical drawing, objects are usually composed of an arrangement of geometrical solids, either in one piece or fastened together. An understanding of the geometrical solids is therefore essential before objects can be satisfactorily represented in technical drawing.



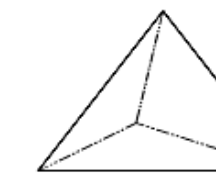
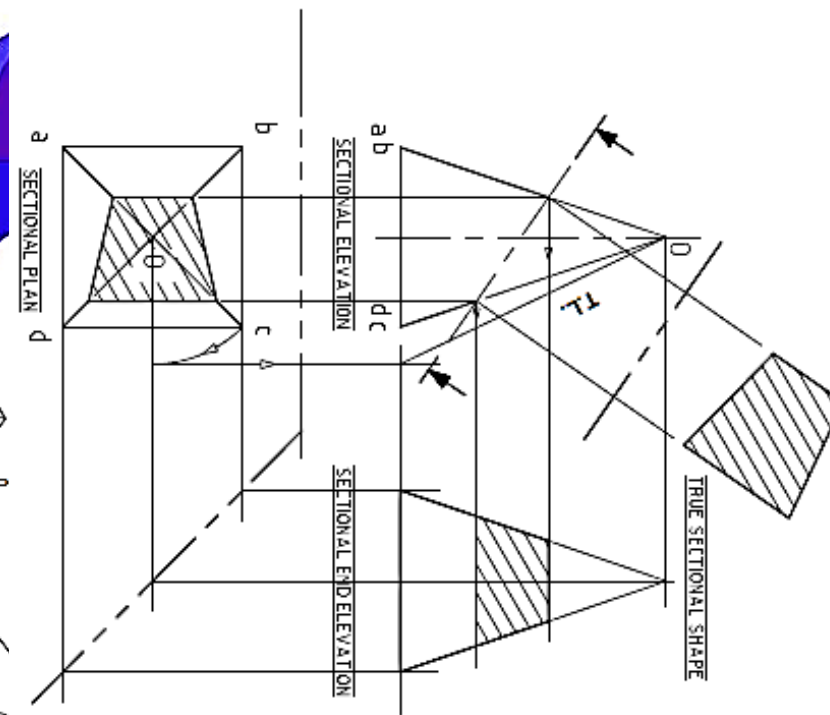
Square Based Pyramid



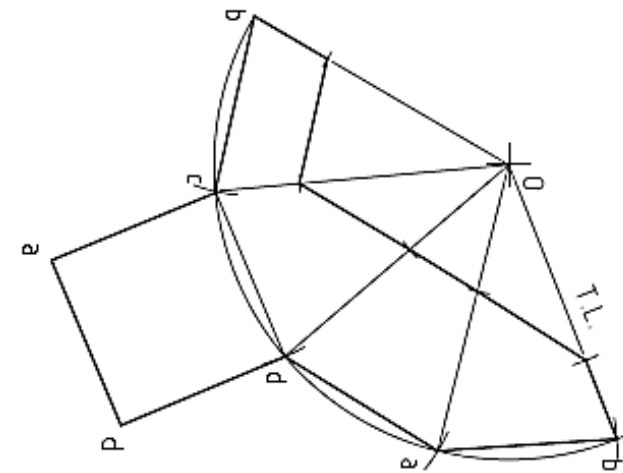
Pentagonal Based Pyramid



Hexagonal Based P

Triangular Based P₁

DEVELOPMENT OF THE TRUNCATED SQUARE PYRAMID



(iii)



The axis of a solid is the imaginary line drawn from the centre of the top to the centre of the base of the solid. When the axis is at right angle to the base, it is called a right solid, and when the axis is inclined to the base or end of a solid it is called an oblique solid. When the edges of the base or end of a solid are equal, it is called regular.

A cube is a solid contained by six equal squares. The axis is the imaginary line joining the centres of the opposite sides. A cube can thus have three axes.

A right regular prism is a solid whose sides consist of equal rectangles, and two equal ends. It is named by its ends. The axis is the line joining the centres of the ends. The axis is the line joining the centres of the ends. Examples of right regular prisms are: square prism, equilateral triangular prism, right pentagonal prism, etc. (A rectangular prism is not a regular prism).

EXAMPLE 1 - DEVELOPMENT OF A TRUNCATED PYRAMID

GIVEN: PLAN AND SECTIONED ELEVATION OF A RIGHT SQUARE PYRAMID

REQUIRED: COMPLETE THE SECTIONAL PLAN AND PROJECT THE SECTIONAL END ELEVATION USING RADIAL LINE DEVELOPMENT METHOD

IT IS IMPORTANT TO KNOW THE:

(i) TRUE LENGTH OF THE EDGE OF THE PYRAMID

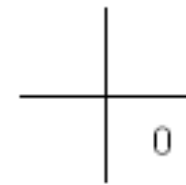
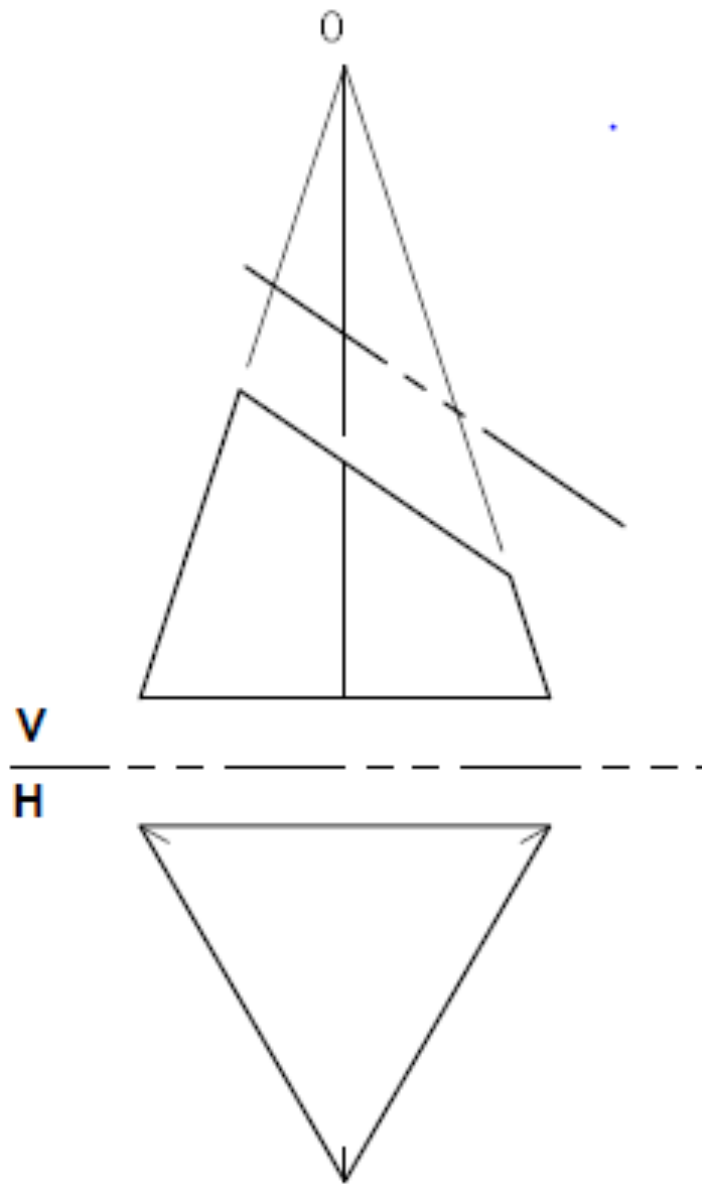
III) BASE EDGES OF THE PYRAMID STEPS TO FOLLOW:

1. COMPLETE THE SECTIONAL PLAN AND PROJECT THE END
2. FIND THE TRUE LENGTH OF THE PYRAMID USING THE REB
3. USING THE TRUE LENGTH DRAW AN ARC FROM THE GIVEN
4. MARK A STARTING POINT ON THE ARC.
5. TAKING MEASUREMENTS FROM THE PLAN STEP OFF THE
6. PROJECT THE FOLD LINES FROM THE MARKED BASE CORN
7. PROJECT THE TRUE LENGTHS OF THE EDGES OF THE TRU
8. USING THE TRUE LENGTHS FROM THE ELEVATION MARK T
9. TAKE MEASUREMENTS FROM THE PLAN AND DRAW THE E
10. DRAW THE OUTLINES TO COMPLETE THE DEVELOPMENT
11. TAKE MEASUREMENTS FROM THE SECTIONAL PLAN TO PI
12. LABEL THE DRAWINGS. DO NOT ERASE THE CONSTRUCT

STUDENT ACTIVITY

GIVEN: THE PLAN OF A TRUNCATED PYRAMID DRAWN IN FIRST ANGLE ORTHOGRAPHIC PROJECTION.

REQUIRED: A. COMPLETE THE SECTIONAL PLAN
B. PROJECT THE TRUE SECTIONAL SHAPE
C. DRAW THE FULL SURFACE DEVELOPMENT
D. LABEL ALL THE DRAWINGS.



THE END