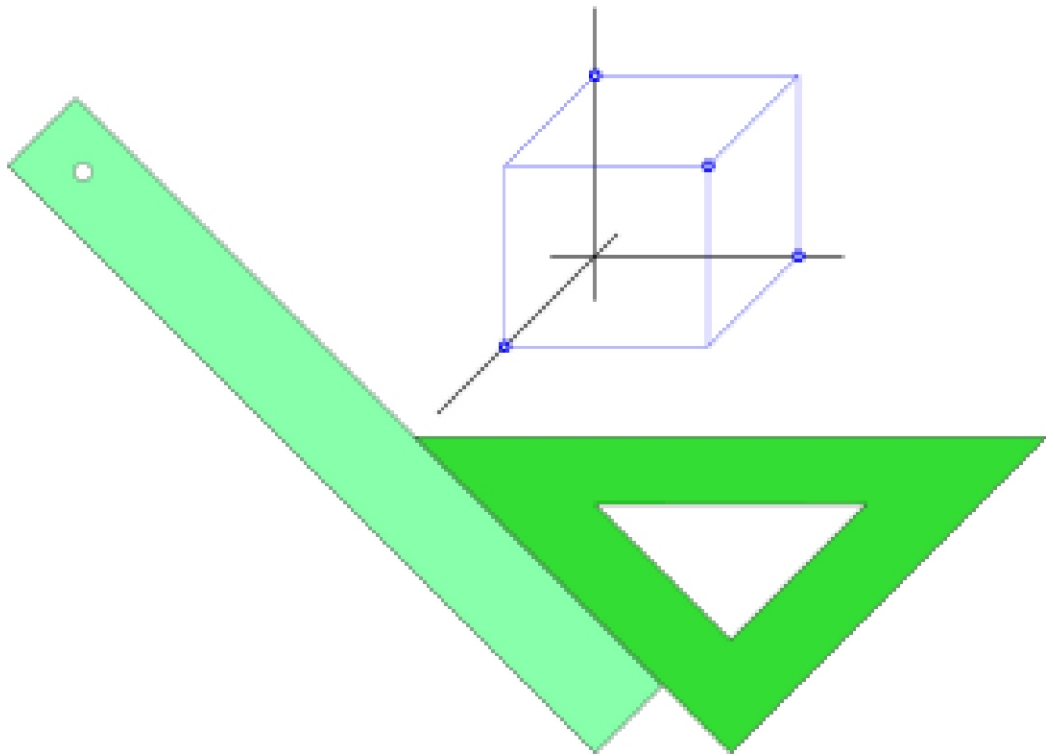


# *OBLIQUE AXONOMETRIC SYSTEM I*



**3rd Term ·Compulsory Secondary Education**

# DESCRIPTIVE GEOMETRY: OBLIQUE AXONOMETRIC PERSPECTIVE

## 1. VOCABULARY

### 1.a MATERIALS AND INSTRUMENTS FOR DRAWING

Ruler : regla  
45 degree set square : escuadra  
60 degree set square : cartabón  
Protractor : transportador  
Compass : compás  
Scissors : tijeras  
Pencil sharpener : sacapuntas  
Eraser : goma de borrar  
Hole punch : máquina perforadora  
Graphite pencils : lápices de grafito  
Coloured pencils : lápices de colores  
Coloured marker pens : rotuladores  
Mechanical pencils : portaminas

### 1.b GLOSSARY

Background: fondo  
Colour wheel: círculo cromático  
Dihedral : sistema diédrico  
Ground line : línea de tierra  
Horizon line: línea de horizonte  
Vanishing line : línea de fuga  
Vanishing point : punto de fuga  
Viewpoint : punto de vista  
Distance : distancia  
Drawing plane : plano de dibujo  
Freehand : a mano  
Grid : cuadrícula  
Midpoint : punto medio  
Pattern : motivo  
Pencil drawing : dibujo a lápiz  
Perpendicular bisector : mediatriz  
Procedure : procedimiento  
Radius : radio  
Shadow : sombra  
Sketch : dibujo  
Sloping :  
Stroke : trazo  
Thickness : Espesor  
Tracing paper : Papel vegetal

### 1.c VERBS

To sharpen graphite pencils : afilar lápices de grafito  
To use graphite pencils : usar lápices de grafito  
To position the model : posicionar el modelo

## 2. TEXTS

### SYSTEMS OF REPRESENTATION

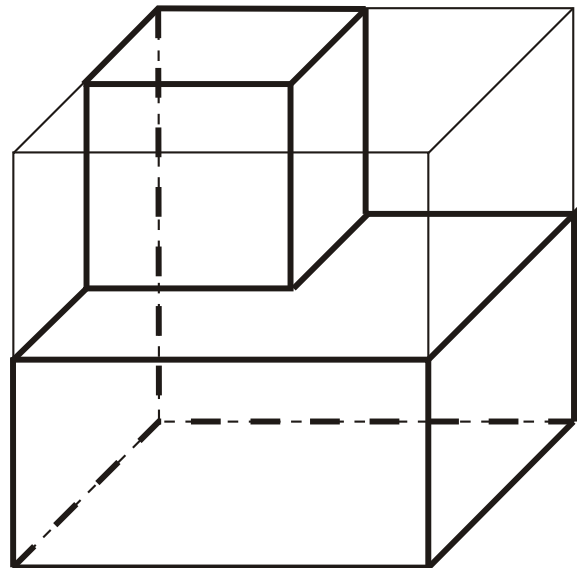
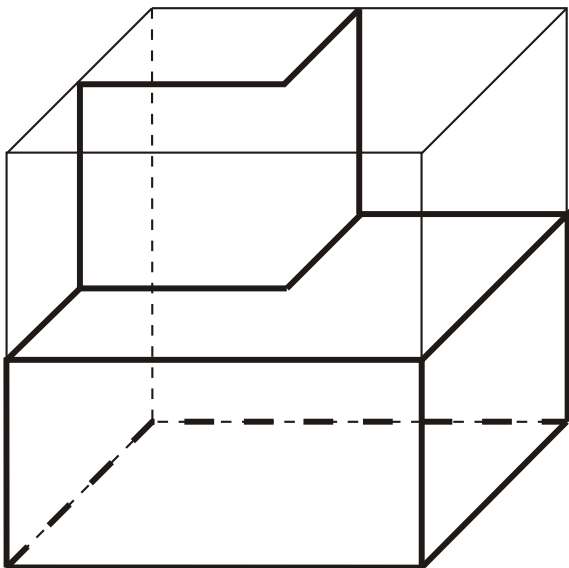
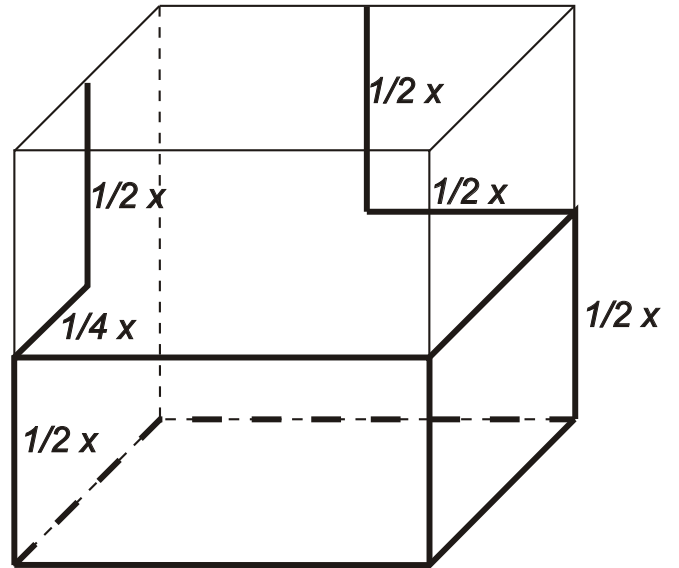
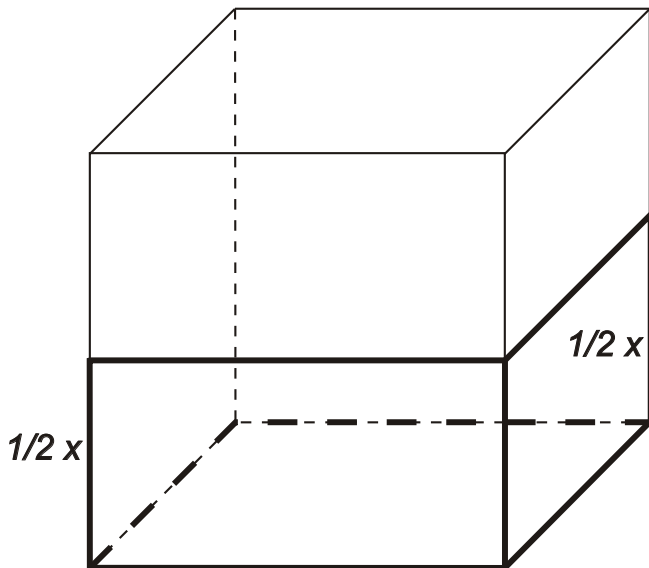
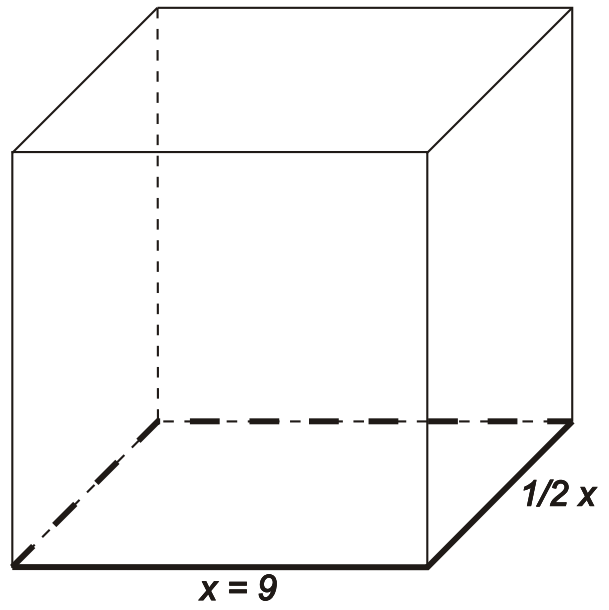
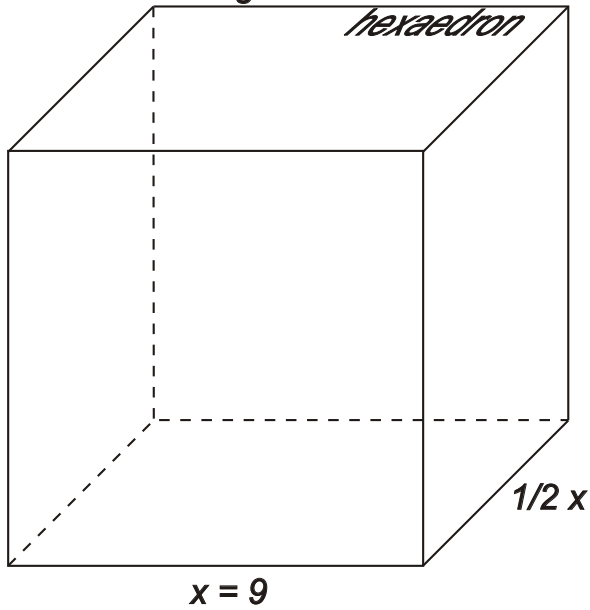
Systems of representation are graphic languages that materialise and specify the biunique correspondence between three-dimensional and two-dimensional spaces. They are a very important part of descriptive geometry.

The oblique axonometric perspective system has three planes that form a rectangular trihedron ( XOY, YOZ and ZOY ). These planes are projected on the drawing plane positioning the plane XOY parallel to the drawing plane.

### 3. ACTIVITIES.

#### 1st sheet

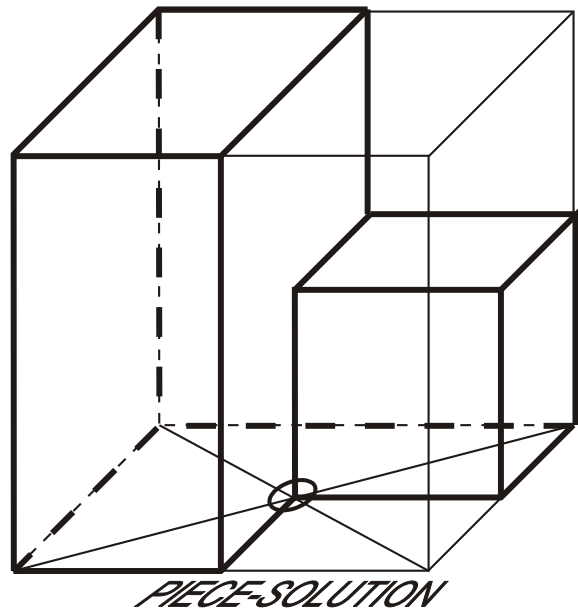
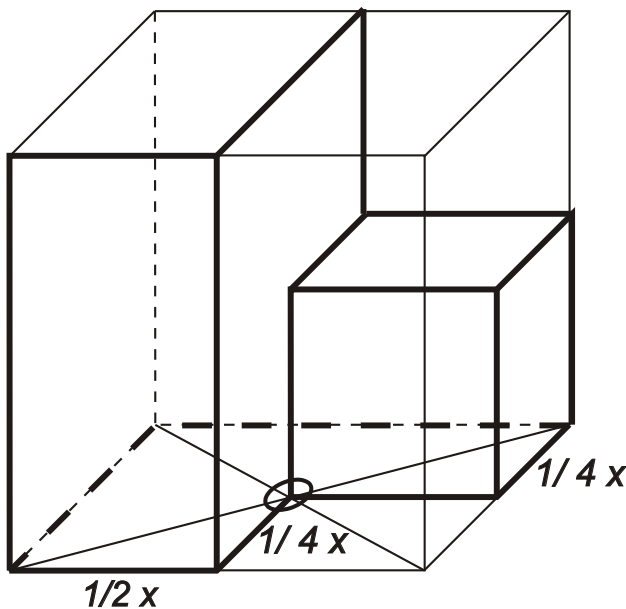
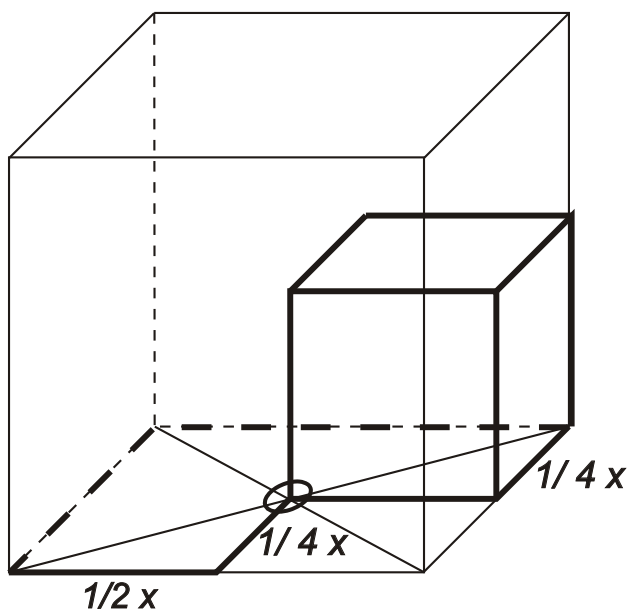
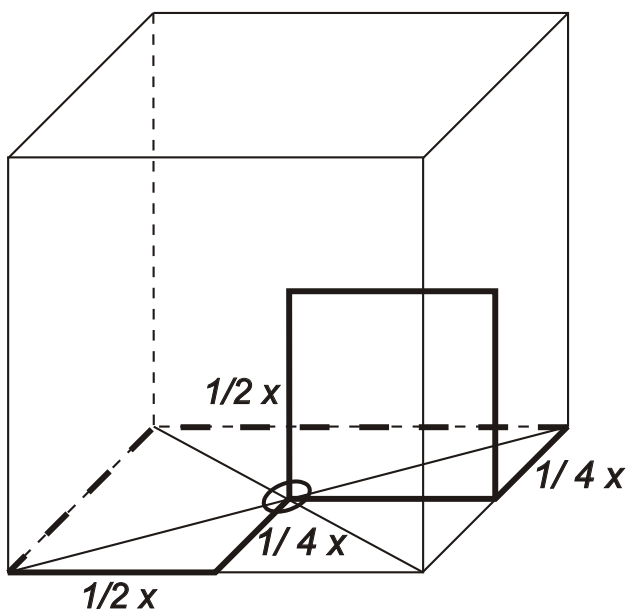
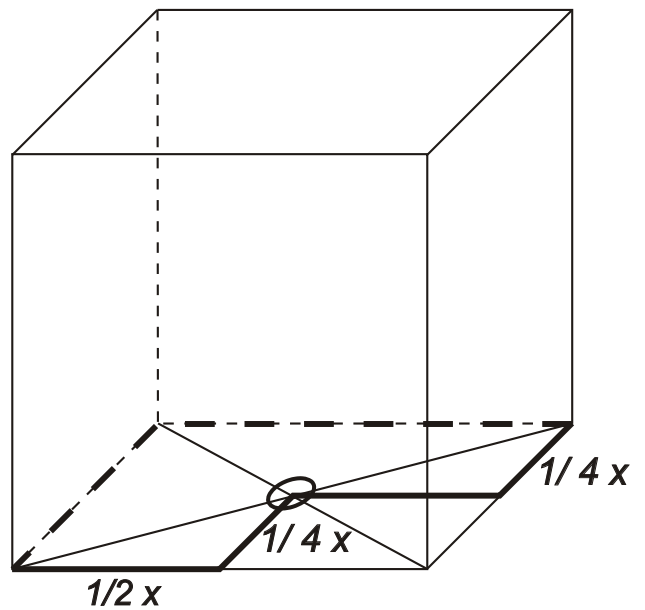
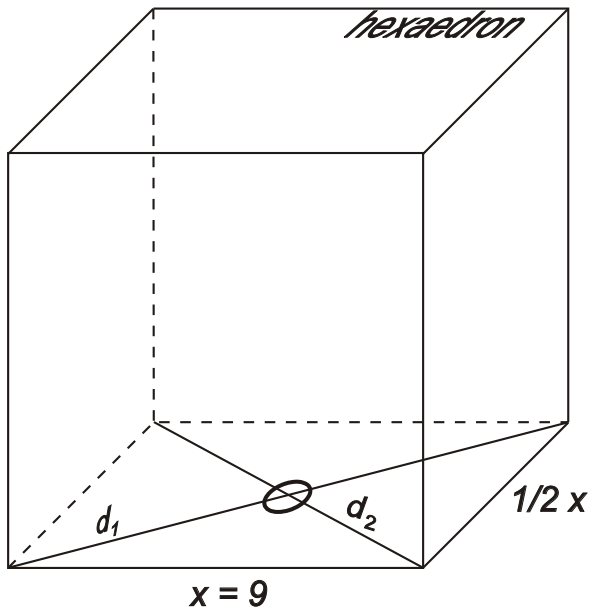
a. Draw the piece inscribed in the hexaedron. All its apexes are apexes of the hexaedron, average points of its edges or points of intersection of its two diagonals. Information: edge of hexaedron: 9 centimeters



*PIECE-SOLUTION*

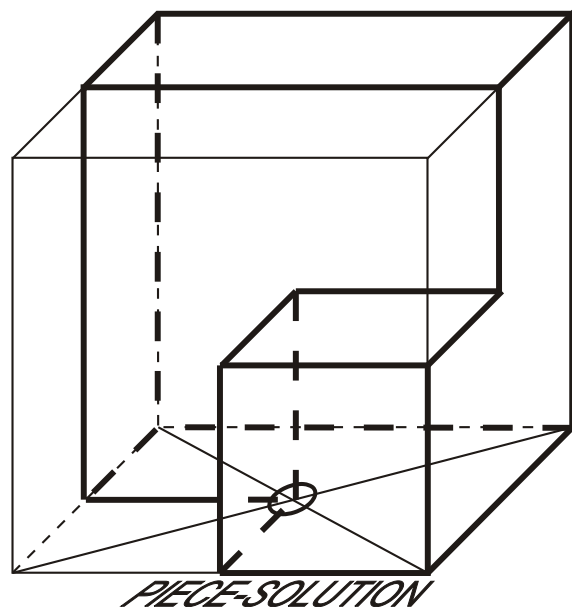
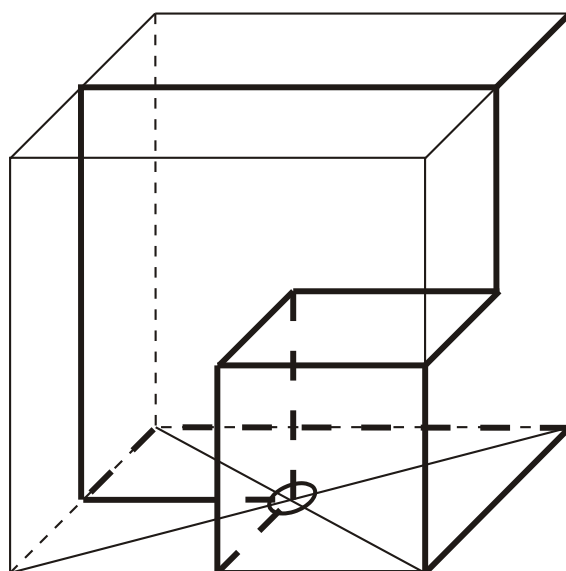
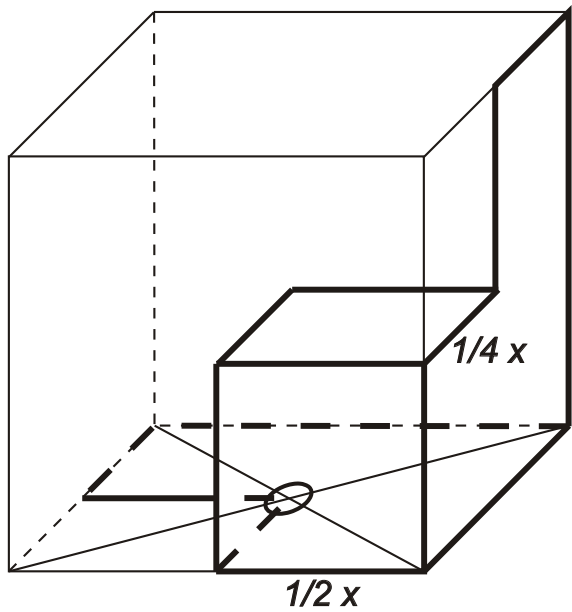
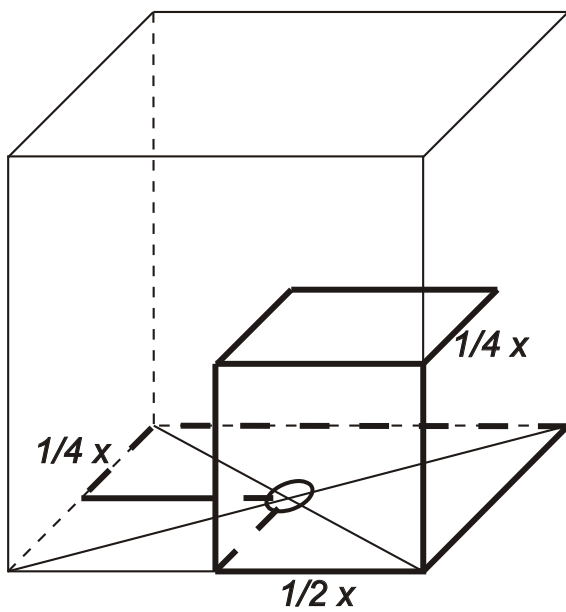
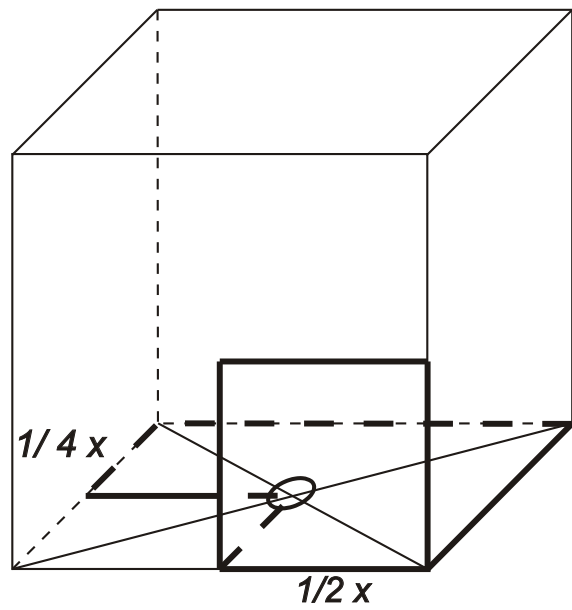
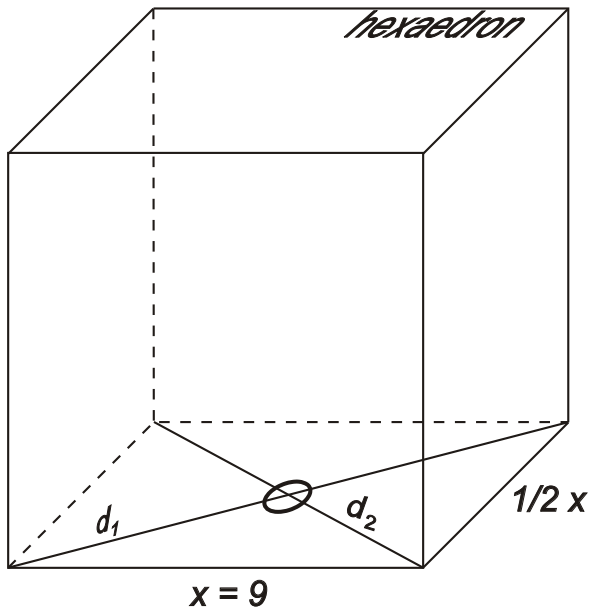
**1st sheet**

a. Draw the piece inscribed in the hexaedron. All its apexes are apexes of the hexaedron, average points of its edges or points of intersection of its two diagonals. Information: Edge of hexaedron: 9 centimeters. Reduction coefficient in straight lines parallel to the axis y: 1/2.



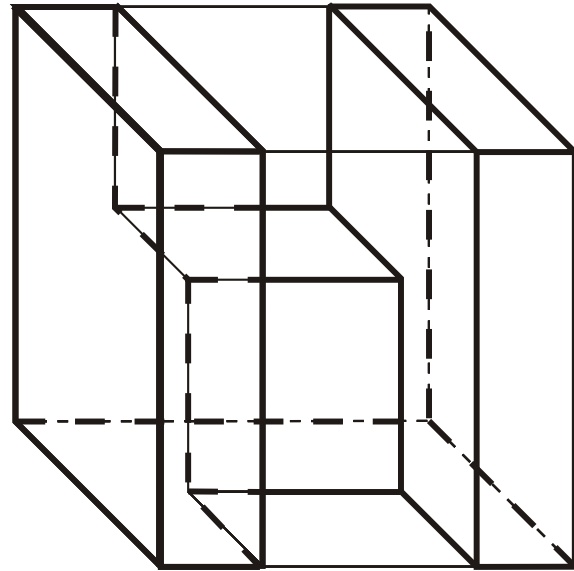
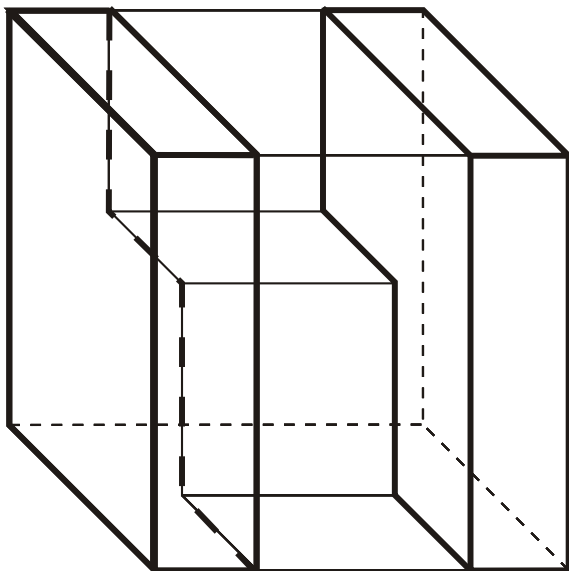
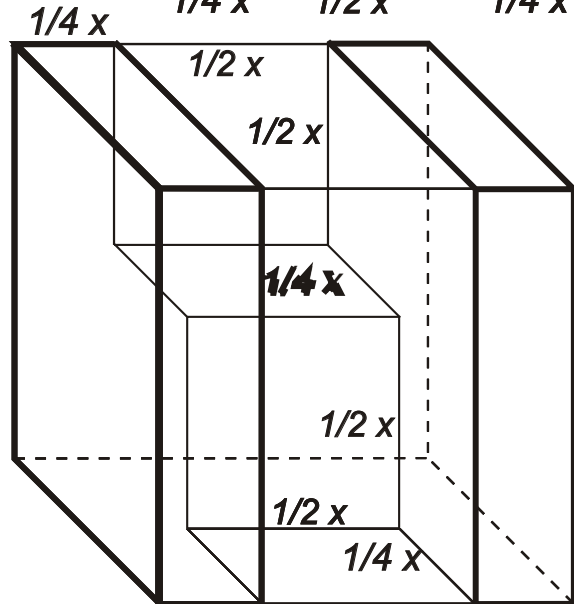
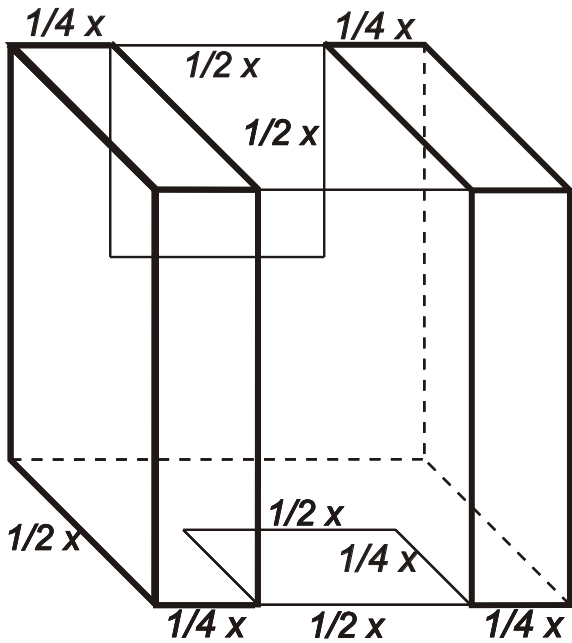
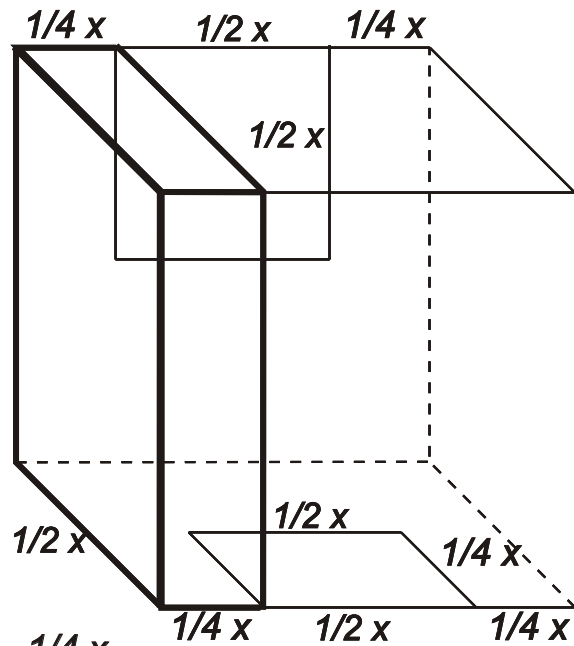
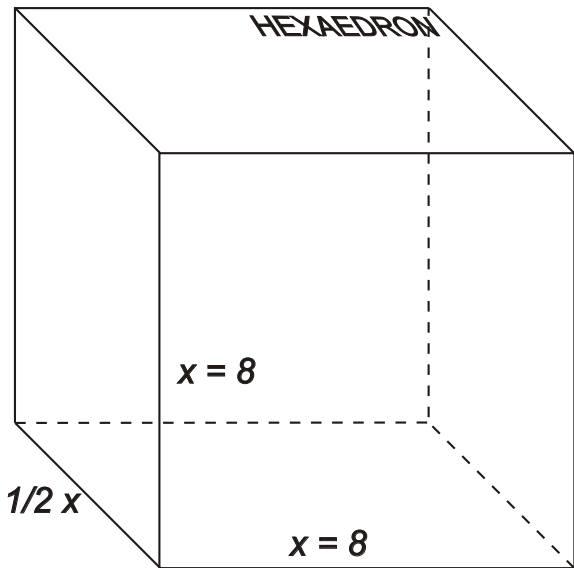
**2nd sheet**

a. Draw the piece inscribed in the hexaedron. All its apexes are apexes of the hexaedron, average points of its edges or points of intersection of its two diagonals. Information: Edge of hexaedron: 9 centimeters. Reduction coefficient in straight lines parallel to the axis y: 1/2.



**2nd sheet**

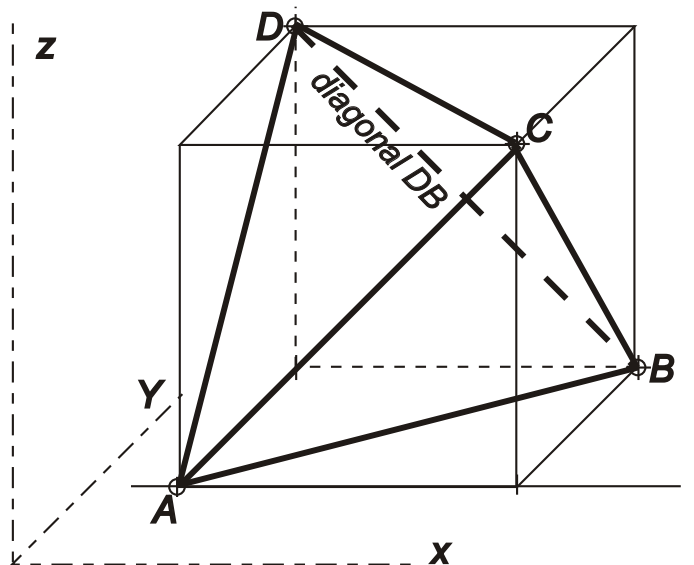
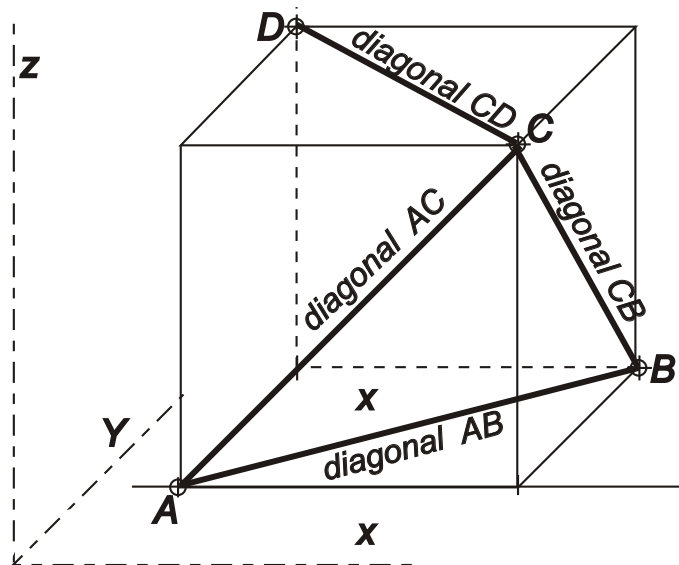
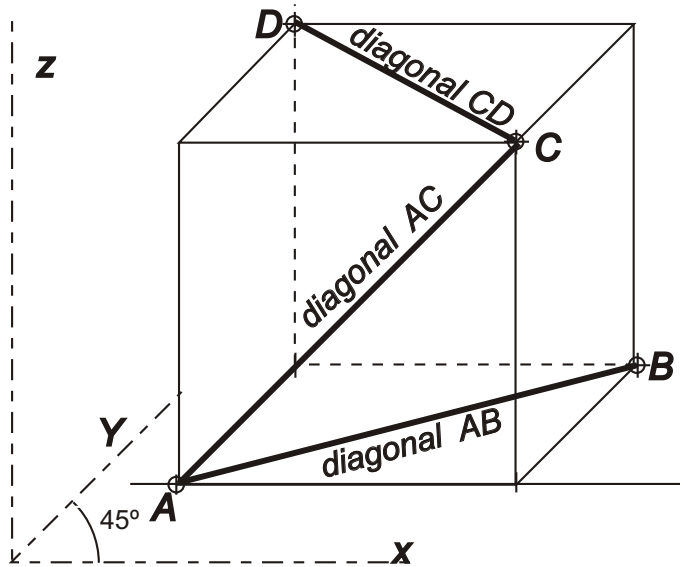
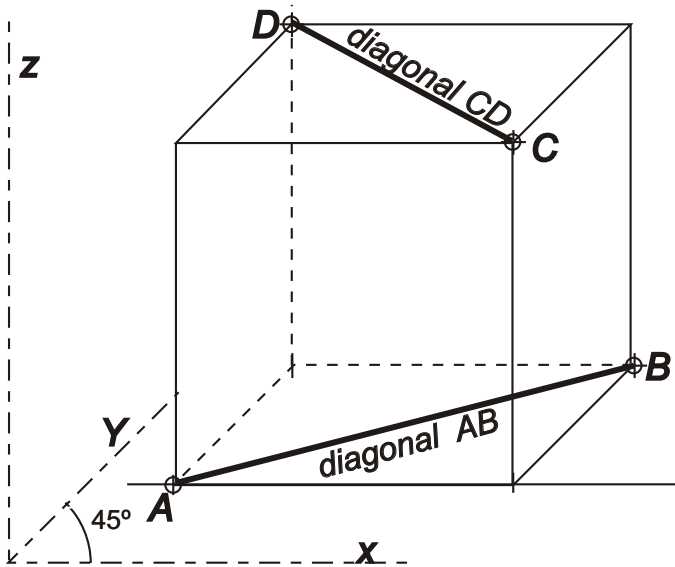
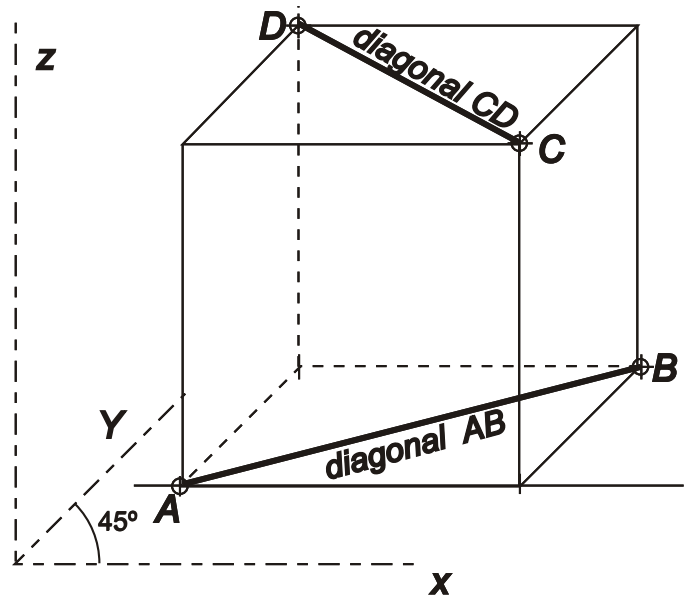
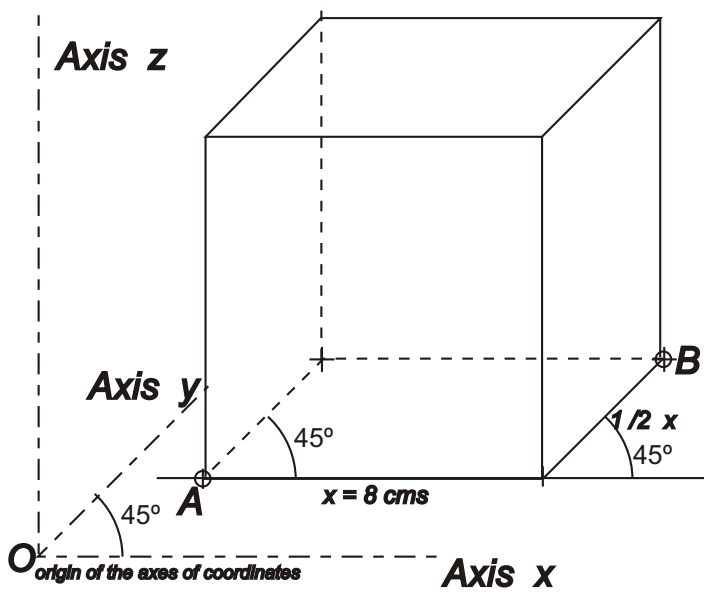
a. Draw the piece inscribed in the hexaedron. All its apexes are apexes of the hexaedron, average points of its edges or points of intersection of its two diagonals. Information: Edge of hexaedron: 8 centimeters. Reduction coefficient in straight lines parallel to the axis y: 1/2.



**PIECE-SOLUTION**

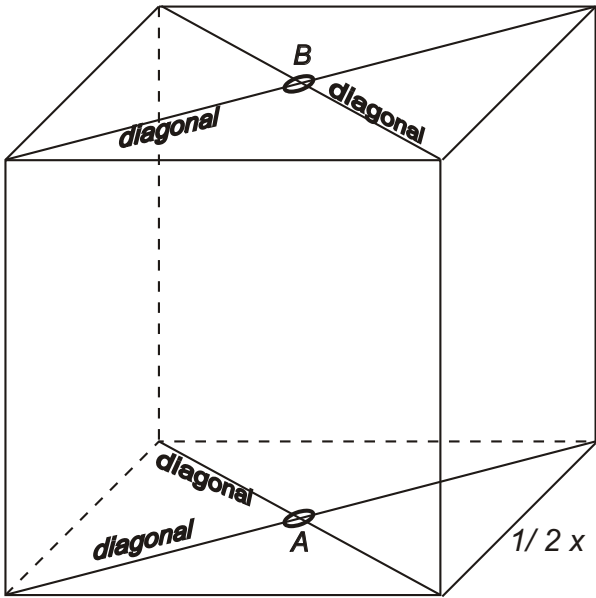
3rd sheet

a. Draw the **TETRAHEDRON**, regular polyhedron which four faces are equilateral triangles, supported on an edge, inscribed in an hexaedron. Information: edge of hexaedron: 8 centimeters. Reduction coefficient in strasight lines parallel to the axis y: 1/2.

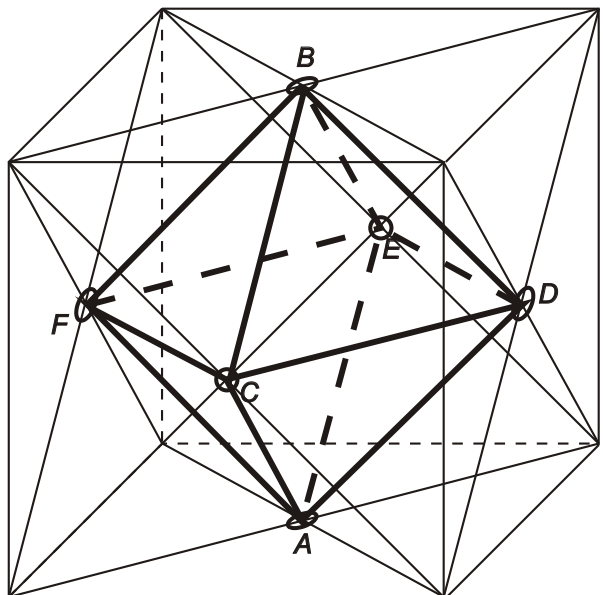
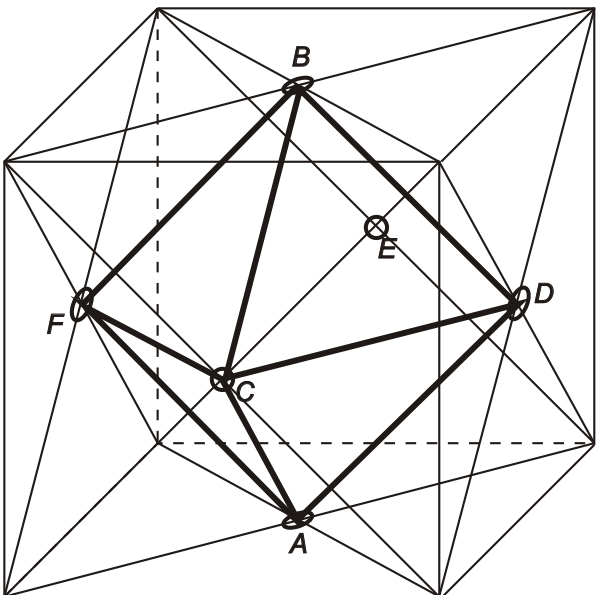
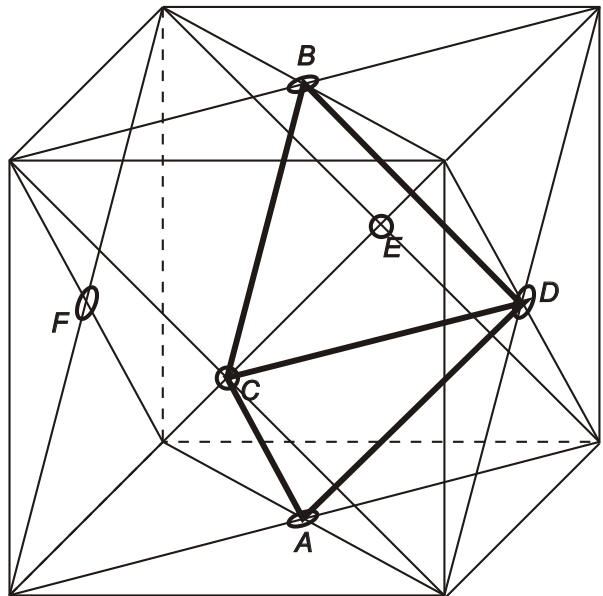
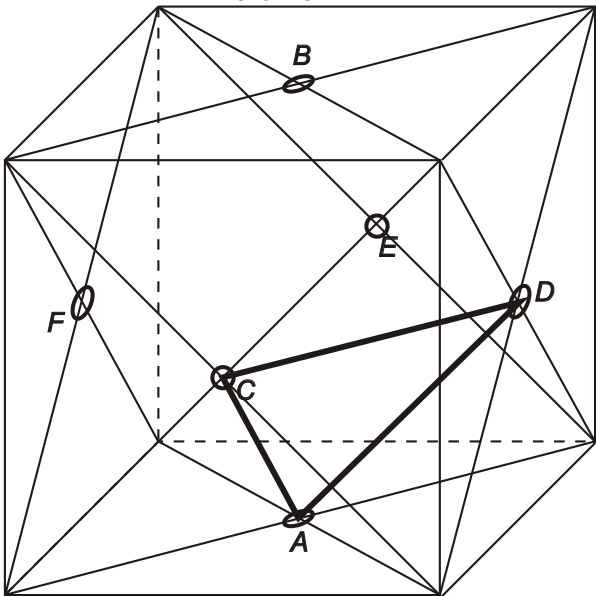
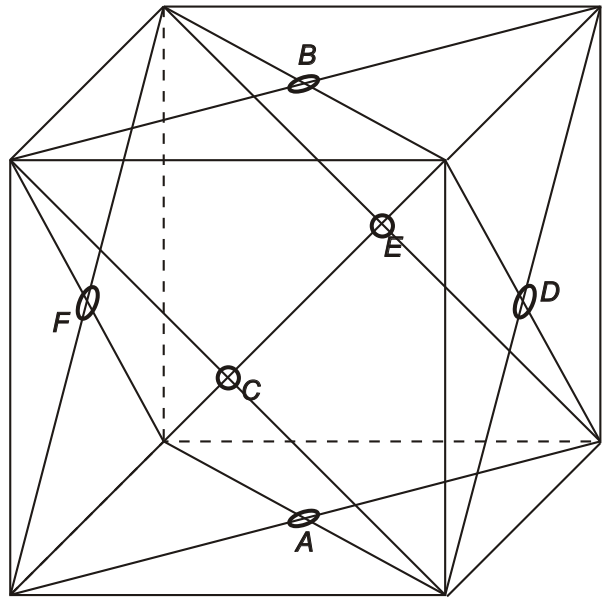


**3rd sheet**

**a. Draw the OCTAHEDRON , regular polyhedron which eight faces are equilateral triangles, supported on an apex, inscribed in an hexaedron. Information: edge of hexaedron: 8 centimeters. Reduction coefficient in straight lines parallel to the axis y: 1/2.**



$x = 8 \text{ cms}$

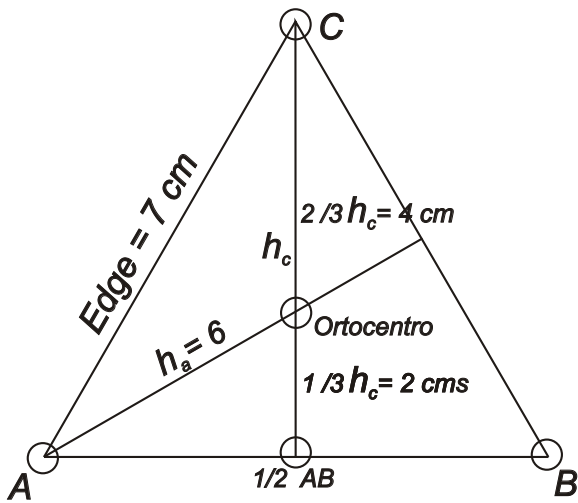




4th sheet

a. Draw the **TETRAHEDRON**, regular polyhedron which four faces are equilateral triangles, supported on a face.

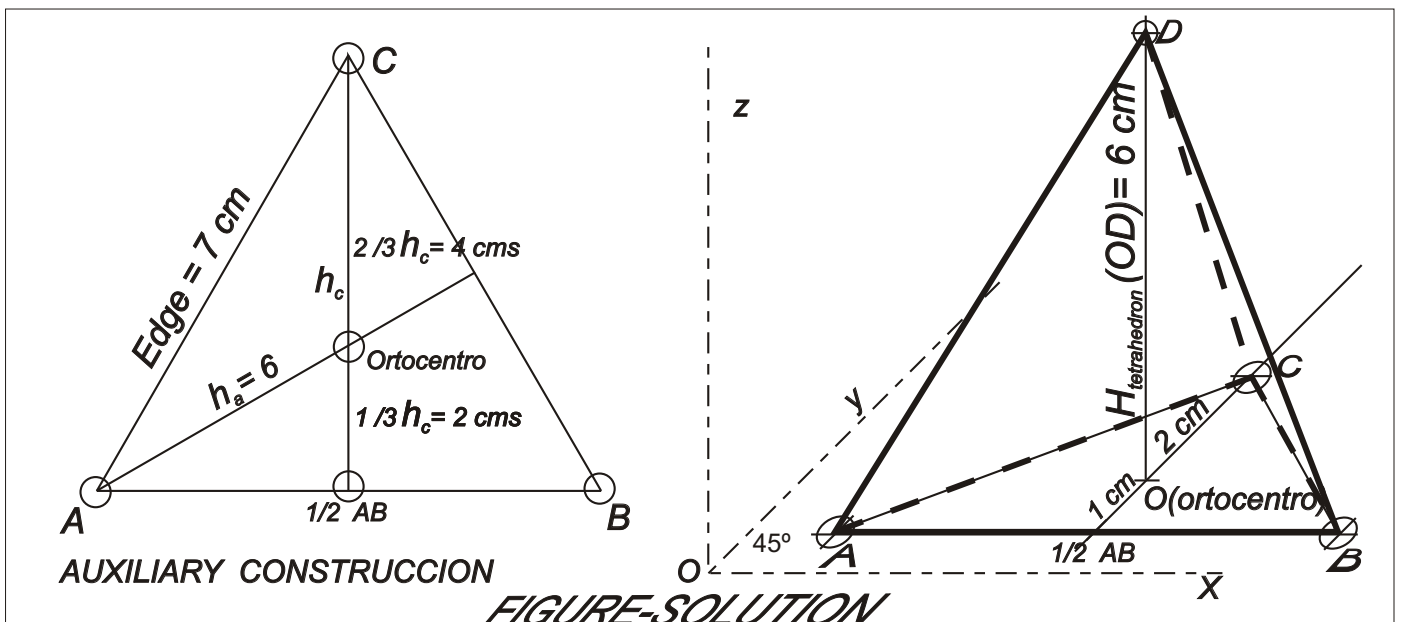
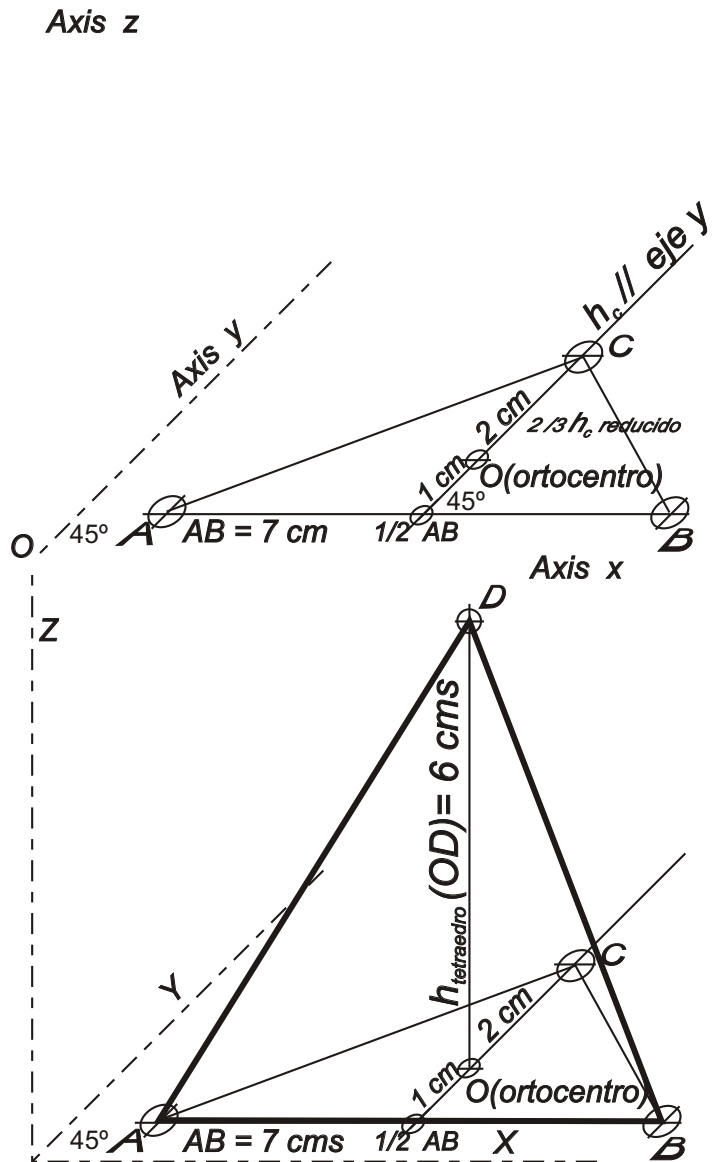
Information: edge of tetrahedron: 7 centimeters. Height of the tetrahedron: 6 cm. Reduction coefficient in straight lines parallel to the axis y: 1/2.



**AUXILIARY CONSTRUCCION**

face ABC: equilateral triangle rested on horizontal plane

vertex D: to 6 cm in the vertical by the ortocentro

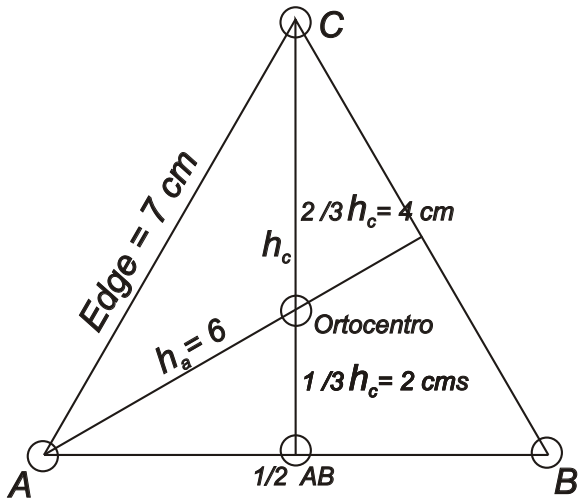


**FIGURE-SOLUTION**

4th sheet

a. Draw the OCTAHEDRON, regular polyhedron which eight faces are equilateral triangles, supported on a face on the horizontal plane.

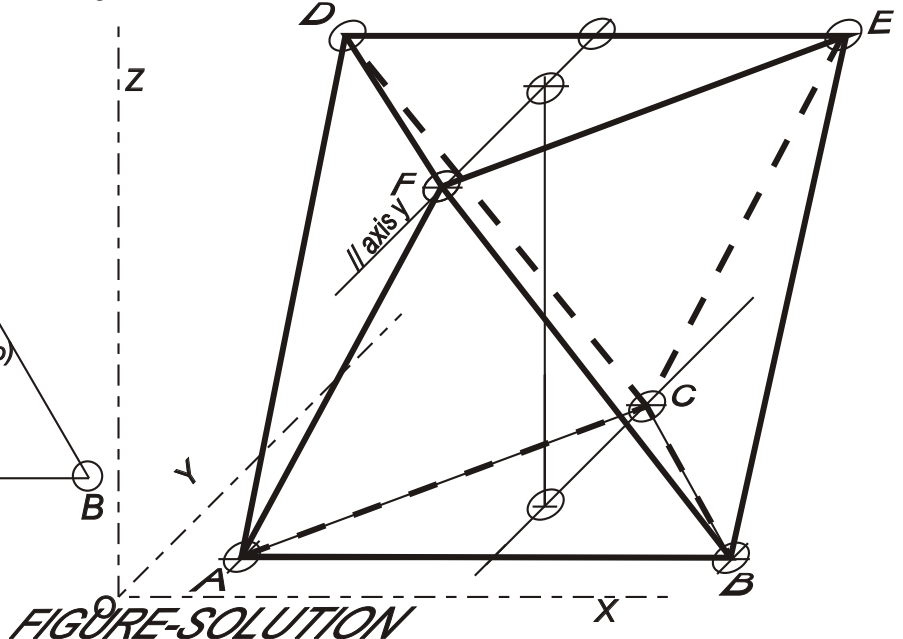
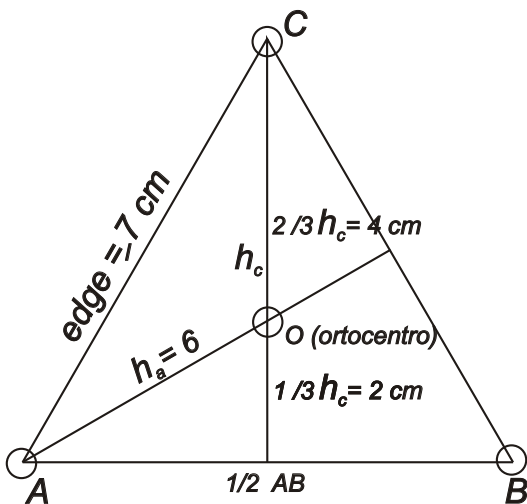
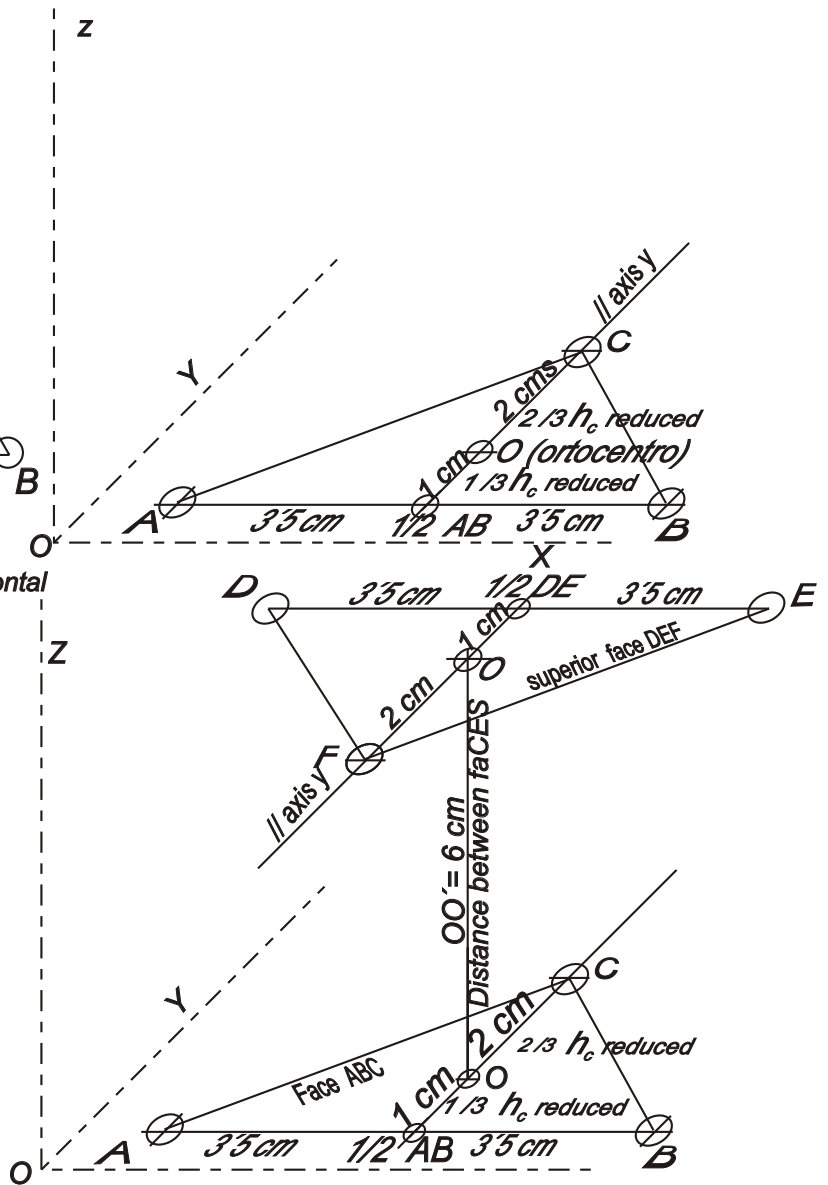
Information: edge of octahedron: 7 cm. Distance between two faces: 6 cm. Reduction coefficient in straight lines parallel to the axis y: 1/2.



**AUXILIARY CONSTRUCCION**

face ABC: equilateral triangle rested on horizontal plane

Distance between parallel faces: 6 cm



**FIGURE-SOLUTION**