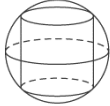


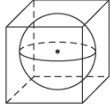
Solid Mensuration

Miscellaneous Planes

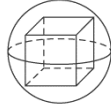
Inscribed Solid → is a solid placed inside another solid with their edges or surface touching each other.



Cylinder Inscribed in a Sphere



Sphere Inscribed in a Cube



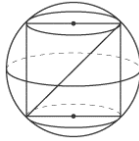
Cube Inscribed in a Sphere

Solid Mensuration

Miscellaneous Planes

Cylinder Inscribed in a Sphere

The diameter of the sphere is equal to the diagonal of the cylinder's height and diameter.

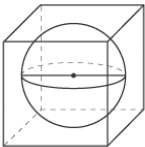


Solid Mensuration

Miscellaneous Planes

Sphere Inscribed in a Cube

The diameter of the sphere is equal to the length of the cube's edge.

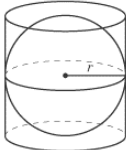


Solid Mensuration

Miscellaneous Planes

Sphere Inscribed in a Cylinder

Both the cylinder and the sphere have the same diameter and radius.



Solid Mensuration

Miscellaneous Planes

Rectangular Solid Inscribed in a Sphere
 The diameter of the sphere is equal to the length of the diagonal of the rectangular solid.

Mapua Institute of Technology
 Prepared By: Albert A. Gingo Jr.

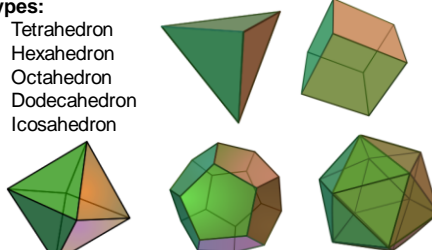
Solid Mensuration

Miscellaneous Planes

Polyhedra
 A polyhedron (plural polyhedra) is a solid which is bounded by polygons joined at their edges.

Types:

1. Tetrahedron
2. Hexahedron
3. Octahedron
4. Dodecahedron
5. Icosahedron



Mapua Institute of Technology
 Prepared By: Albert A. Gingo Jr.

Solid Mensuration

Miscellaneous Planes

Similar Figures
 Two polyhedra are said to be similar if they have the same number of faces and whose corresponding polyhedral angles are congruent.

Properties of Similar Polyhedra

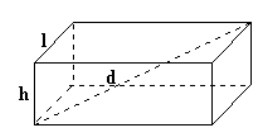
1. $\frac{x_1}{y_1} = \frac{x_2}{y_2}$
2. $\frac{A_1}{A_2} = \left(\frac{x_1}{x_2}\right)^2$
3. $\frac{V_1}{V_2} = \left(\frac{x_1}{x_2}\right)^3$

Mapua Institute of Technology
 Prepared By: Albert A. Gingo Jr.

Solid Mensuration

Miscellaneous Planes

Rectangular Solid – rectangular parallelepiped



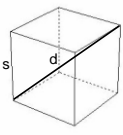
- Diagonal, $d = \sqrt{l^2 + w^2 + h^2}$
- LSA = $2lh + 2wh$
- TSA = $2lh + 2wh + 2lw$
- Volume = lwh

Mapua Institute of Technology
 Prepared By: Albert A. Gingo Jr.

Solid Mensuration

Miscellaneous Planes

Cube



• Diagonal, $d = \sqrt{3}s$
 • LSA = $4s^2$
 • TSA = $6s^2$
 • Volume = s^3

Mapua Institute of Technology
Prepared By: Albert A. Giron Jr.

Solid Mensuration

Miscellaneous Planes

Ex#1. p82 no.9

Find the volume and the total surface area of the rectangular solid shown in the figure.

Ans. $V = 24$ cu. Units $TSA = 52$ sq. units

Mapua Institute of Technology
Prepared By: Albert A. Giron Jr.