



Zero to 3D in 60 Minutes

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Agenda



Creating 3D Geometry

Creating Advanced 3D Geometry

Logical - **Unions**, **Subtracts** and **Intersect**

Geometrical - **Extrusions**, **Lofts**, **Revolves** and
Sweeps

Questions

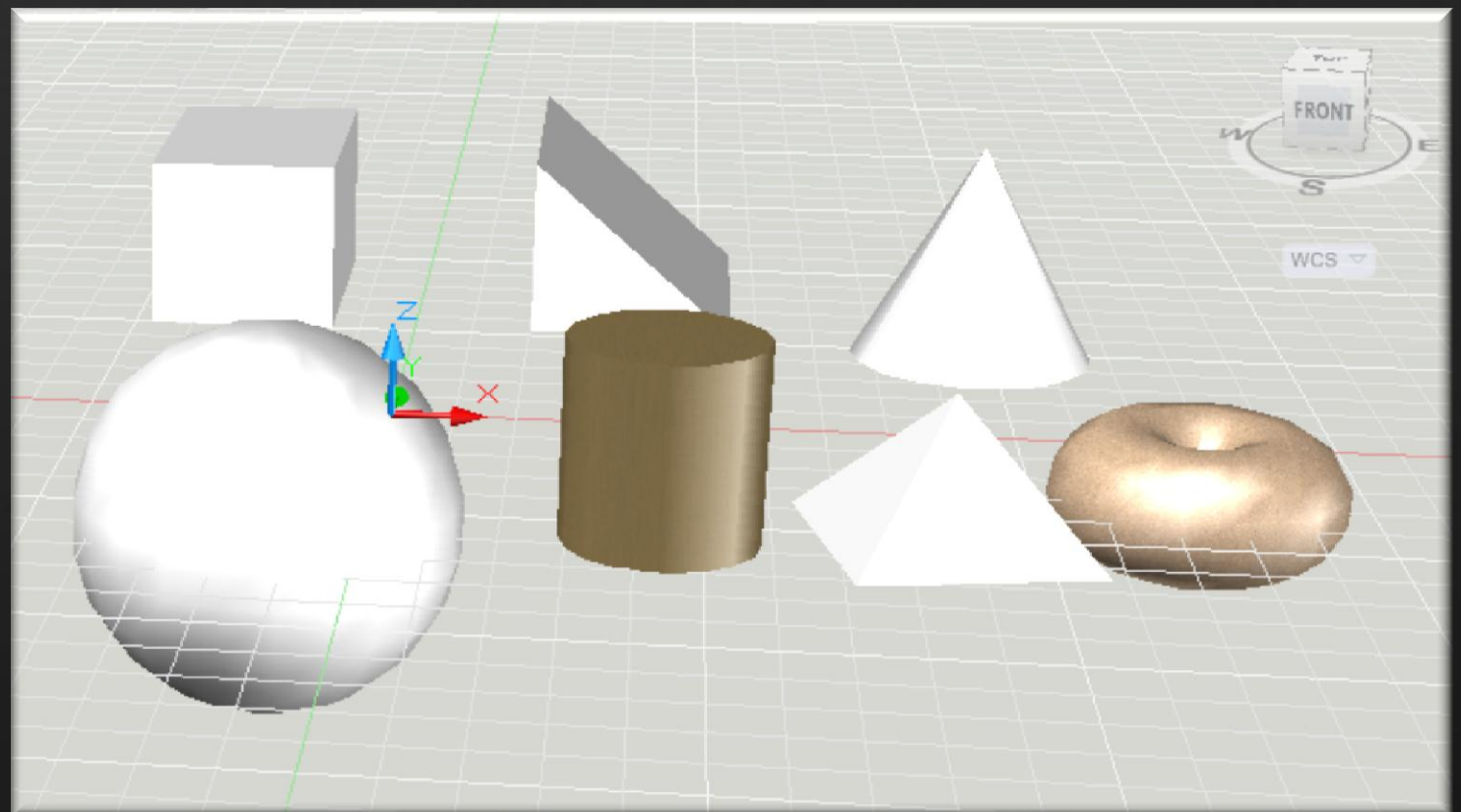
Creating 3D Geometry

Using AutoCAD



Easy to Create Basic 3D Geometry – Solid Types

- Known as **Primitive Solids**
- Commands
 - **Box, Wedge, Cone, Cylinder, Sphere, Pyramid, Torus**
- See AutoCAD Help [Create 3D Solid Primitives](#)



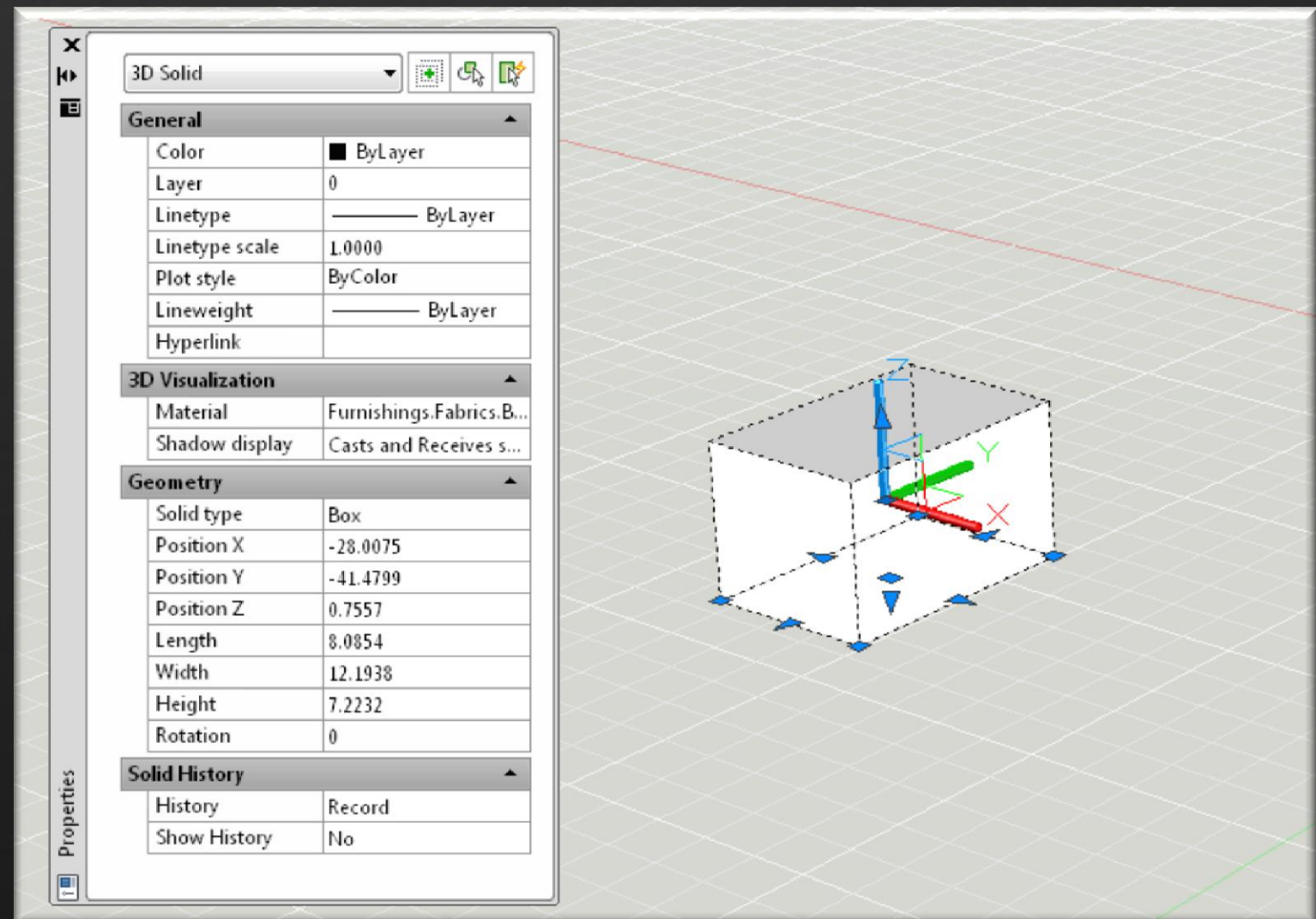
Creating 3D Geometry

Using AutoCAD



You can easily modify Primitive Solids

- Via the Properties Window
- Via Grips
- Basic Properties
 - Keeps Shape



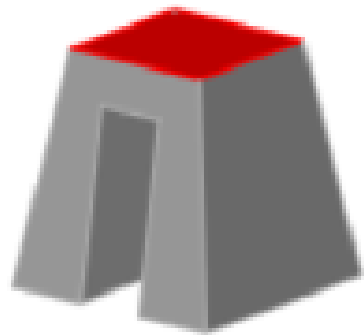
Creating 3D Geometry

Using AutoCAD

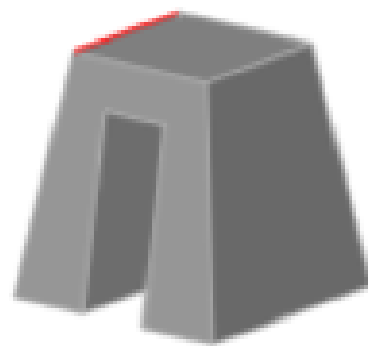


Advanced modification is possible

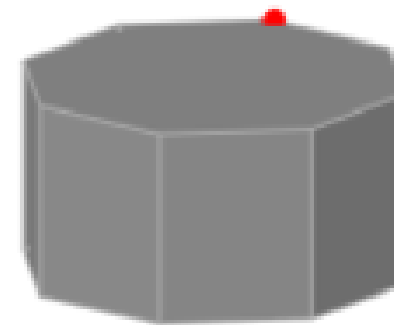
- Sub-Object Selection (**CTRL+Left Click**)
 - Faces
 - Edges
 - Vertices



face on 3D solid



edge on 3D solid



vertex on 3D solid

Creating 3D Geometry

Show how...

3D
3D

Demo

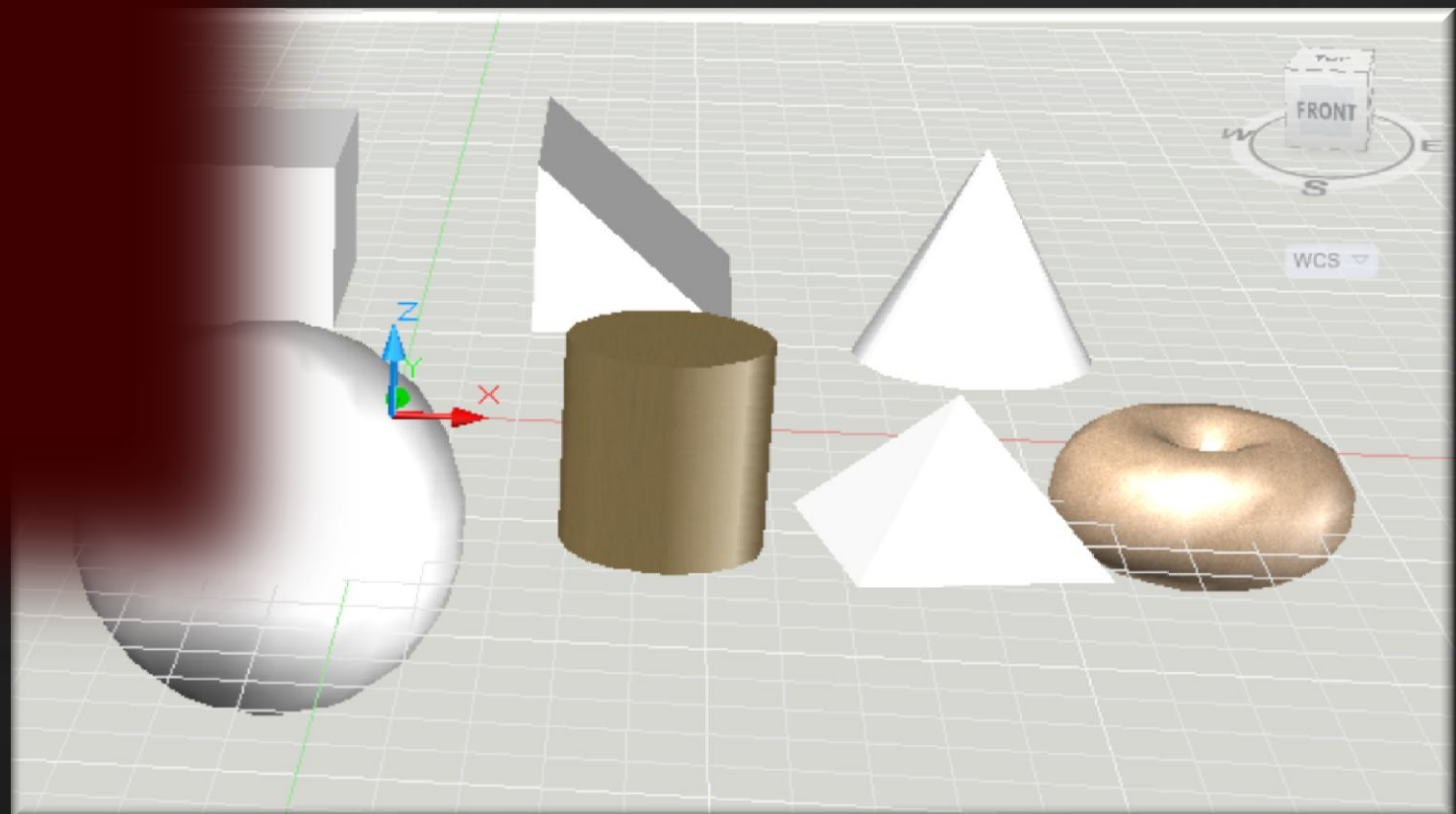
“Basic 3D”

Demonstrating

Visual Studio 2008

Using Solid3d class

Using C# .NET



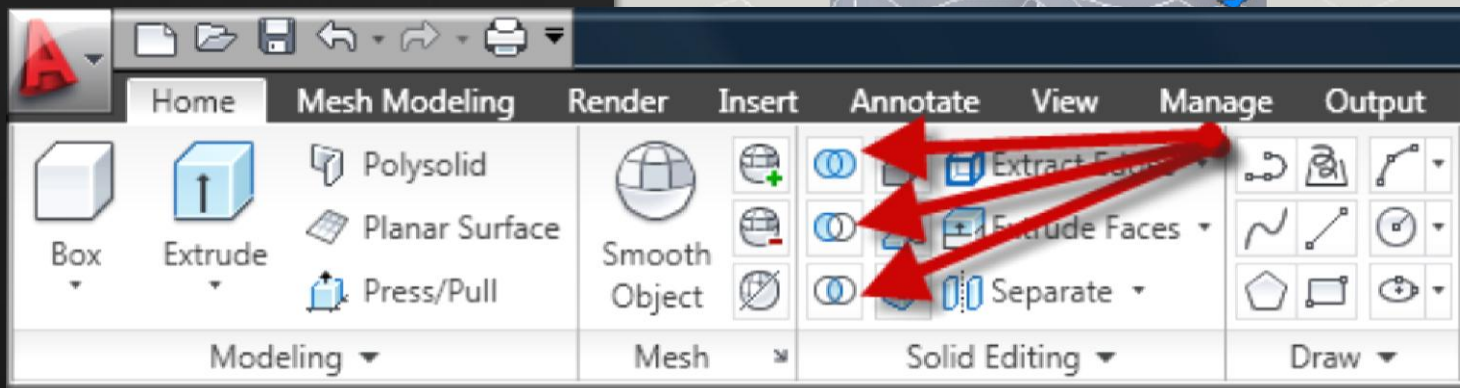
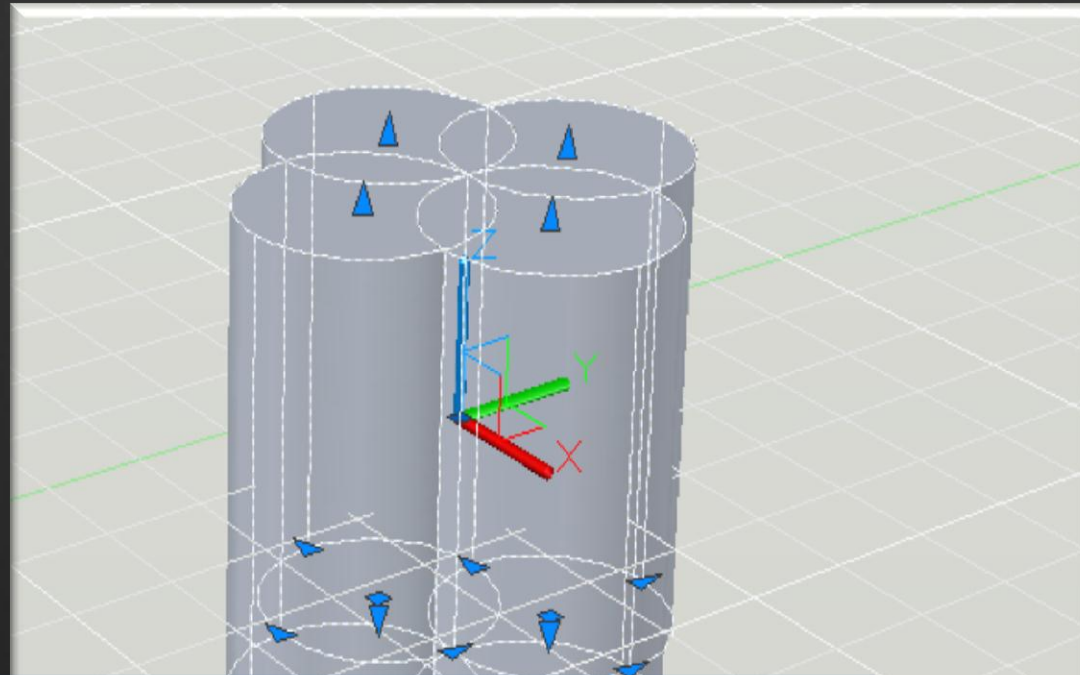
Creating Advanced 3D Geometry

Using Logical Operations



Synthesizing Solids

- Union
- Subtract
- Intersect



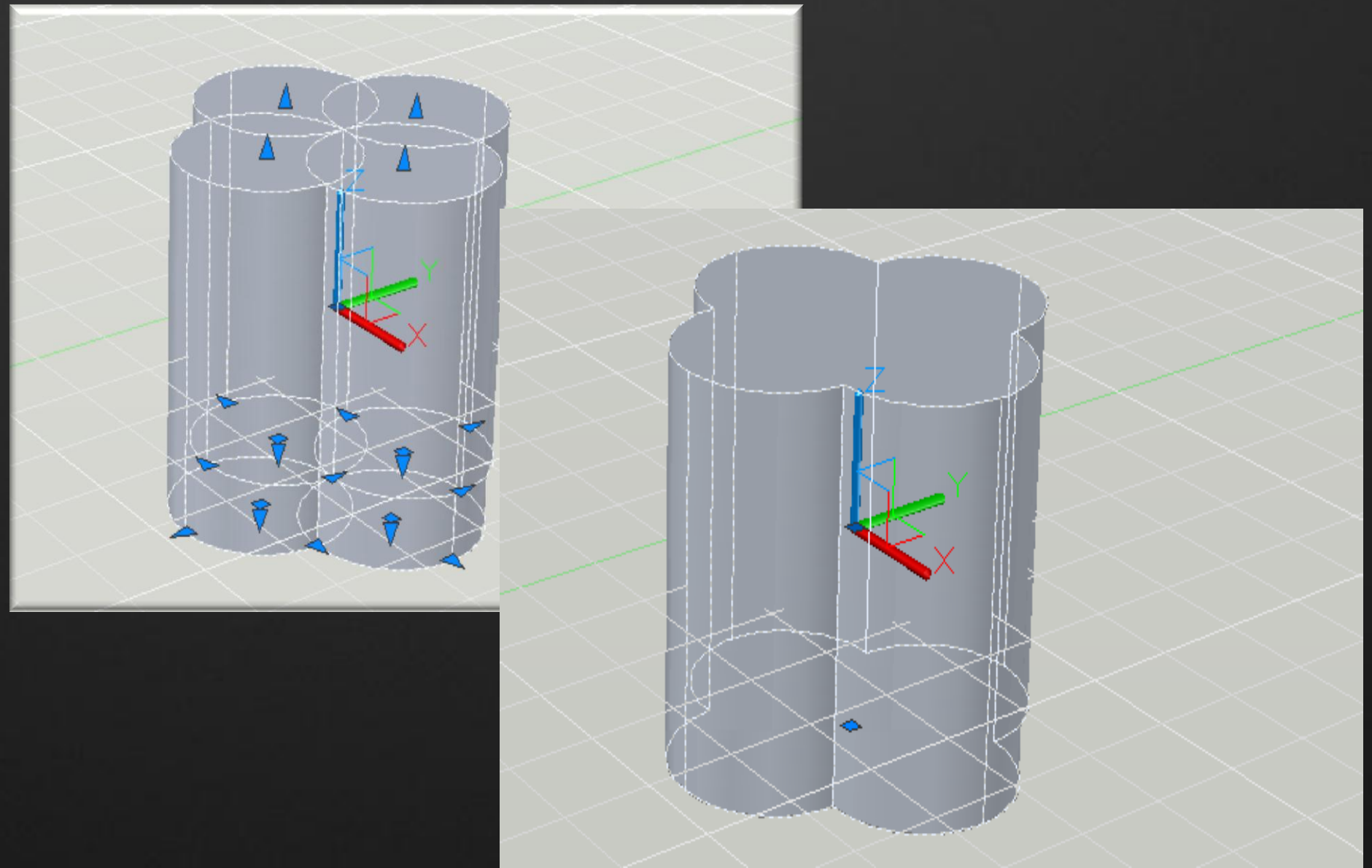
Creating Advanced 3D Geometry

Using Logical Operations



Synthesizing Solids

- Union
- Combine



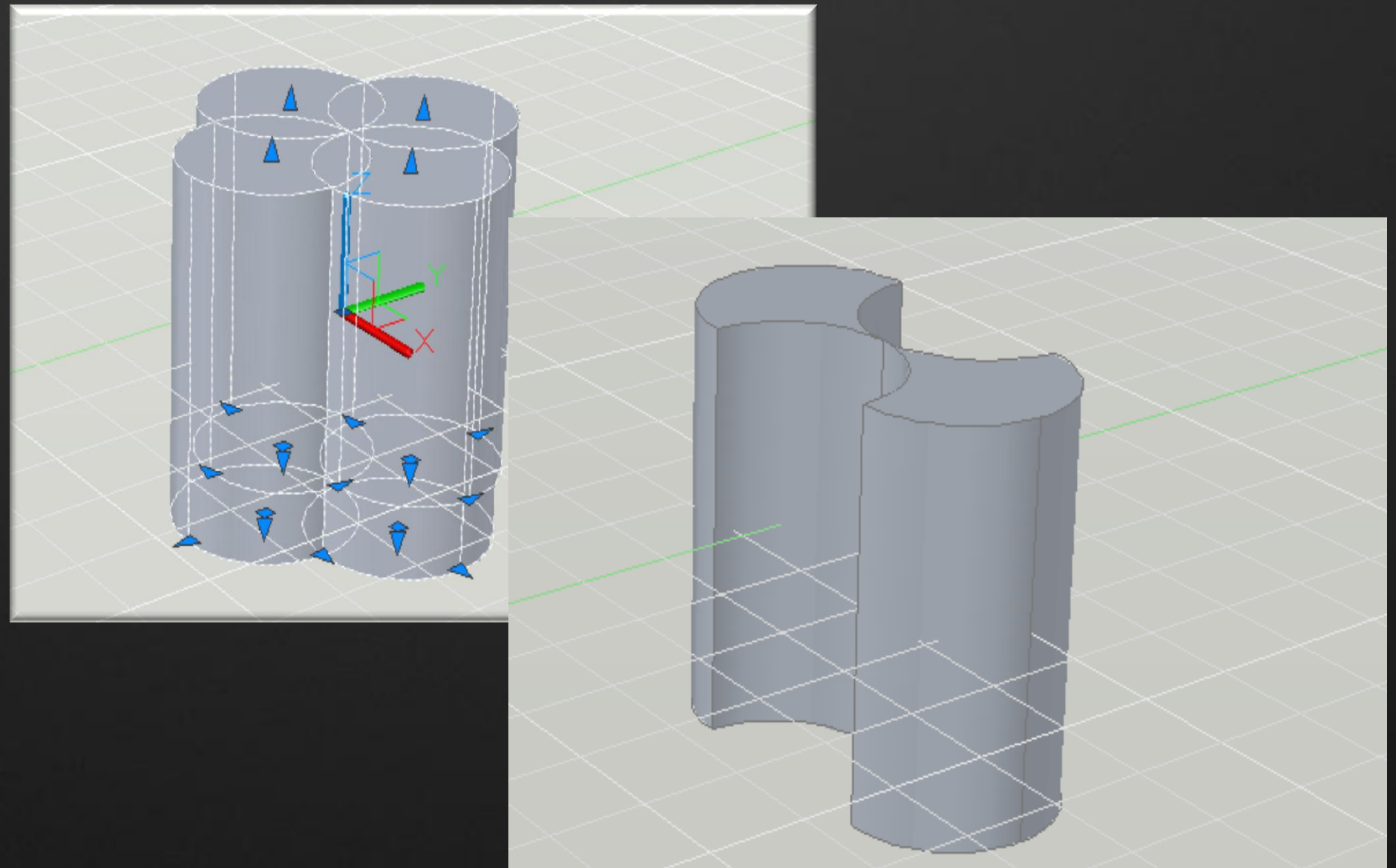
Creating Advanced 3D Geometry

Using Logical Operations



Synthesizing Solids

- Subtract



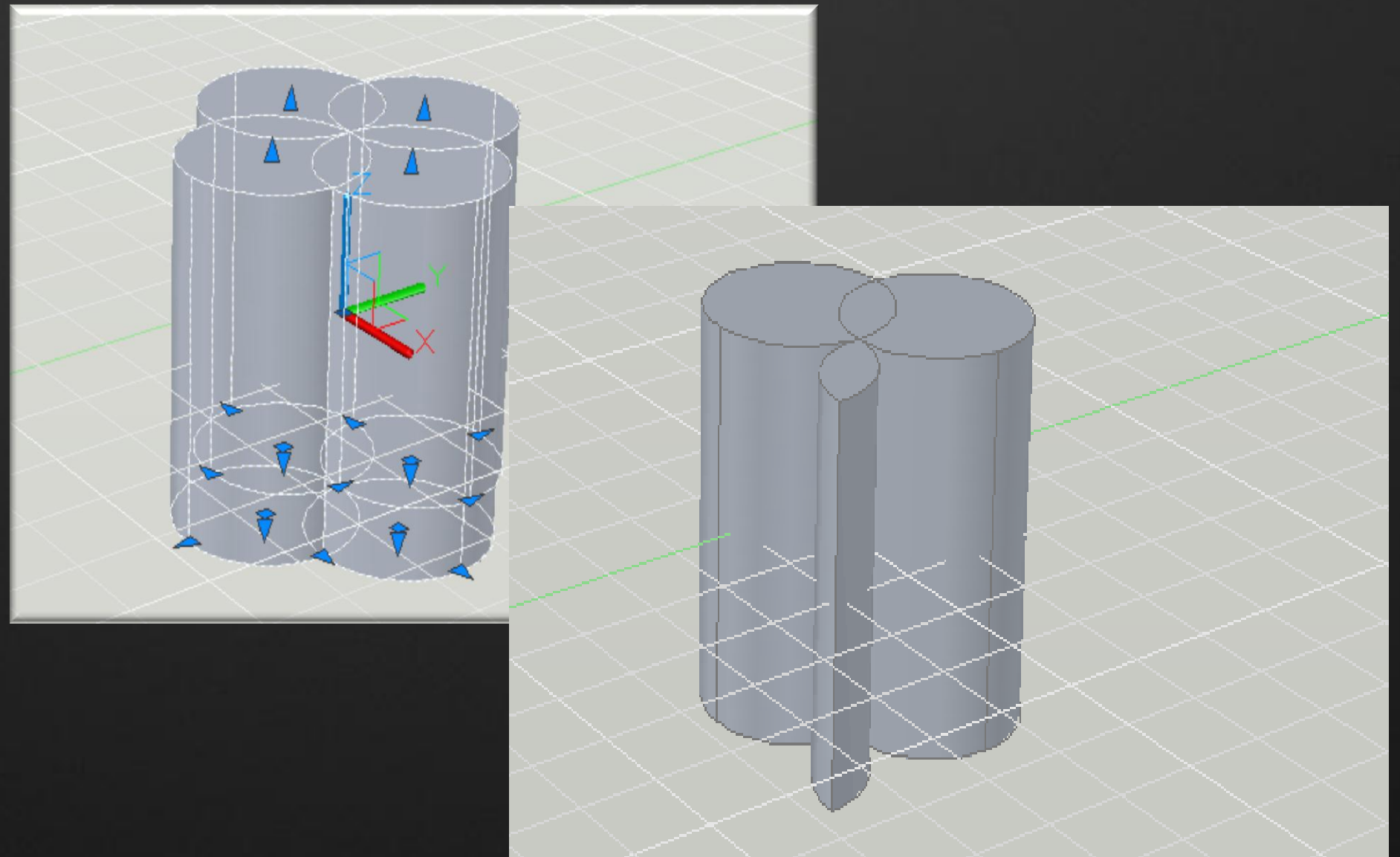
Creating Advanced 3D Geometry

Using Logical Operations



Synthesizing Solids

- Intersect
 - Common



Creating 3D Geometry

Show how...

3D
3D

Demo

“Logical 3D”

Demonstrating

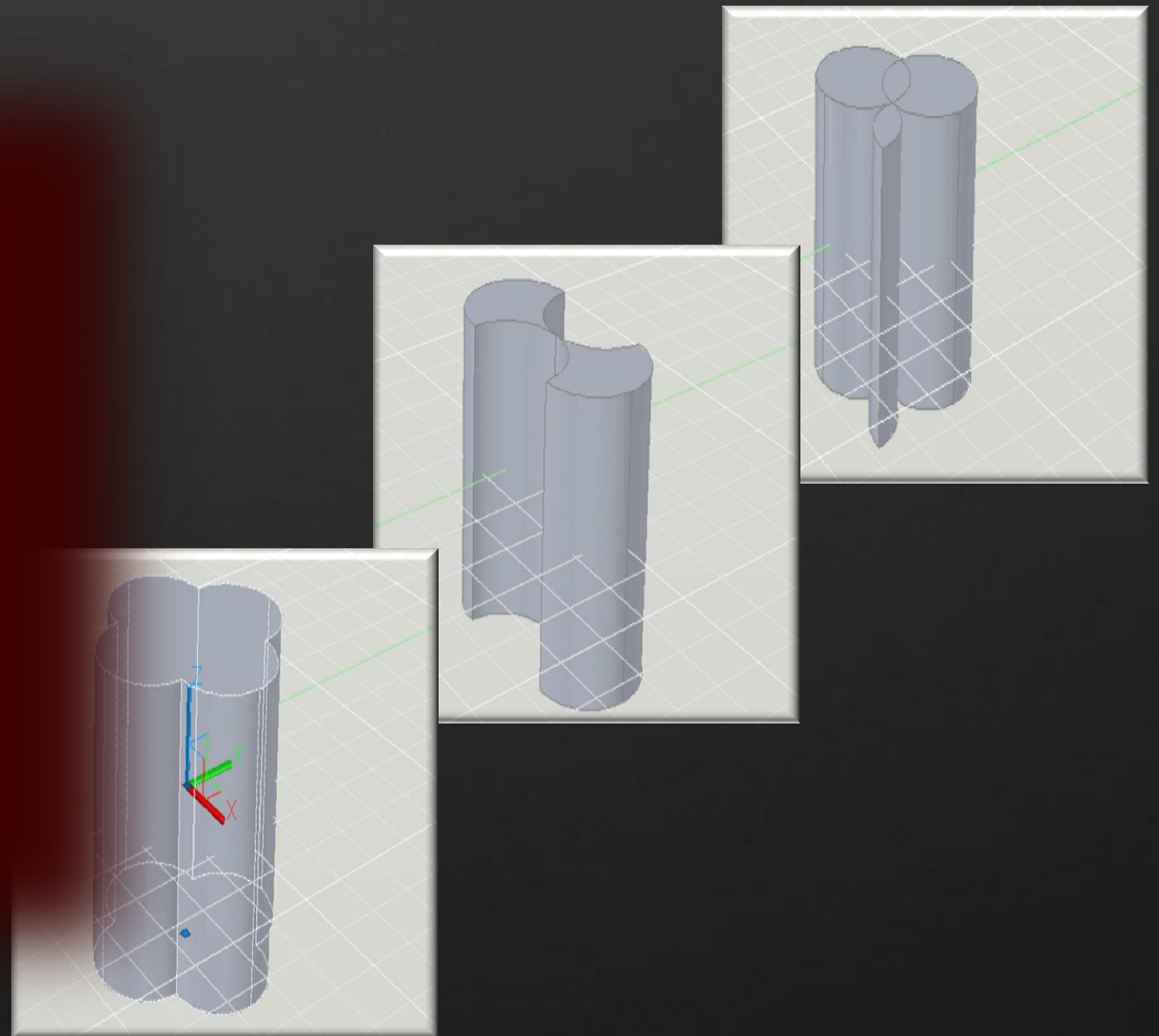
Logical Solid3D Operations

Union

Subtract

Intersect

Using C# .NET

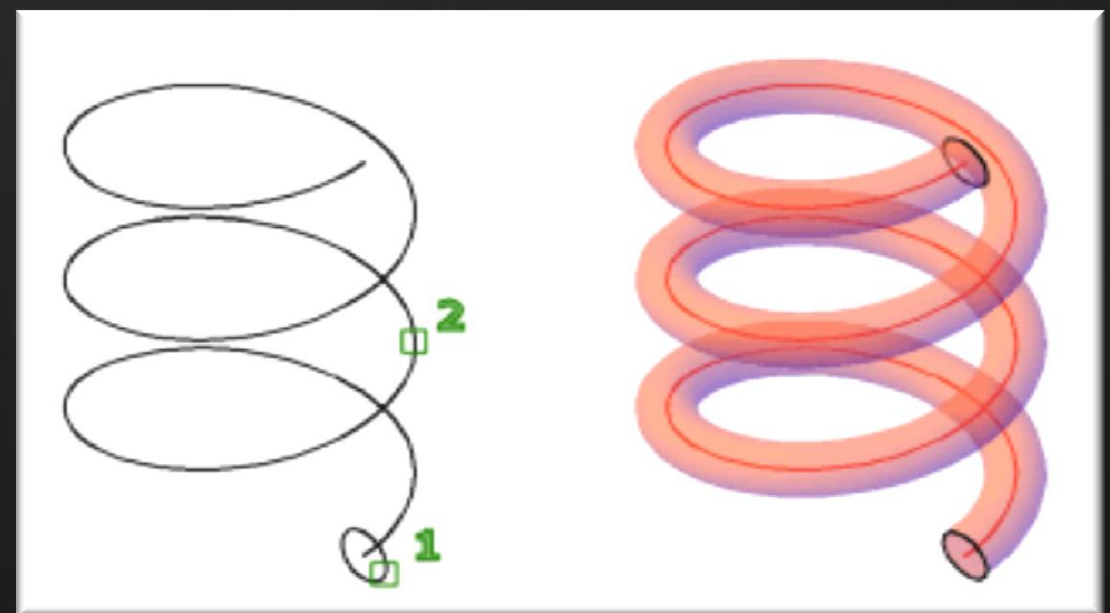
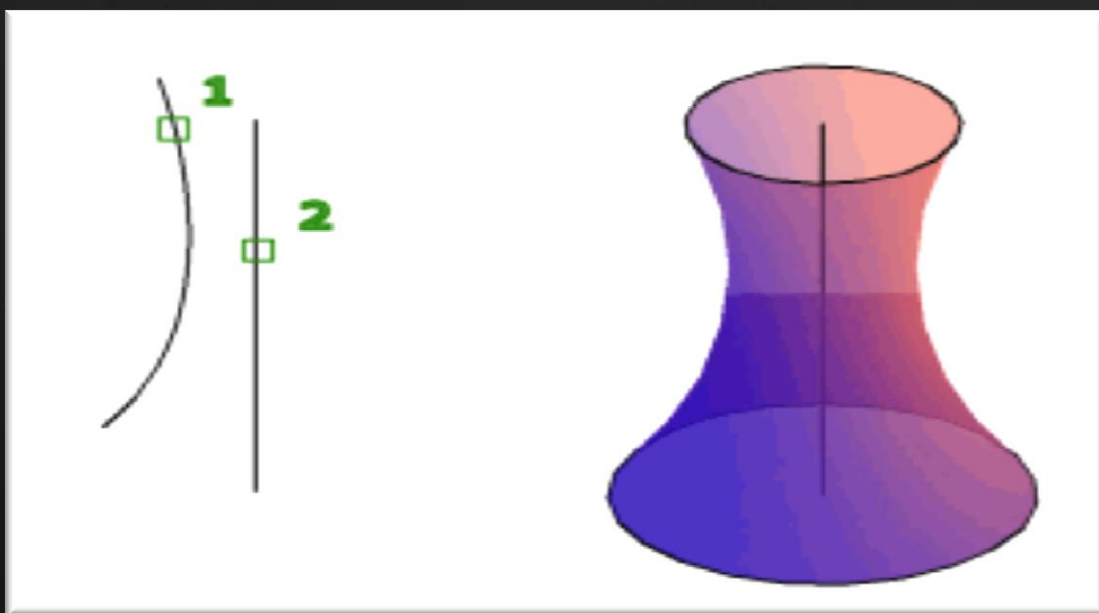
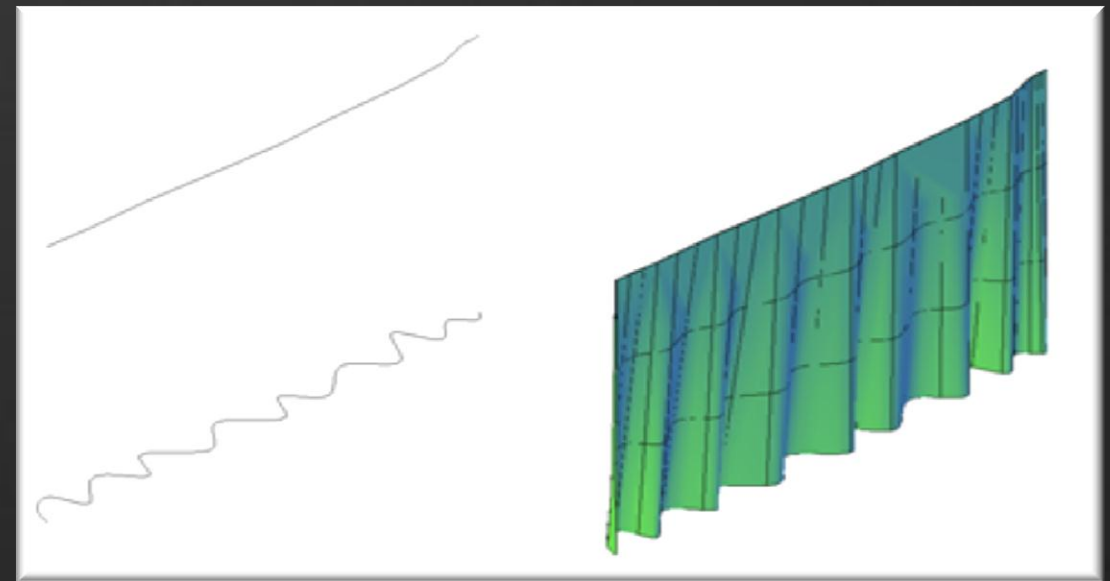
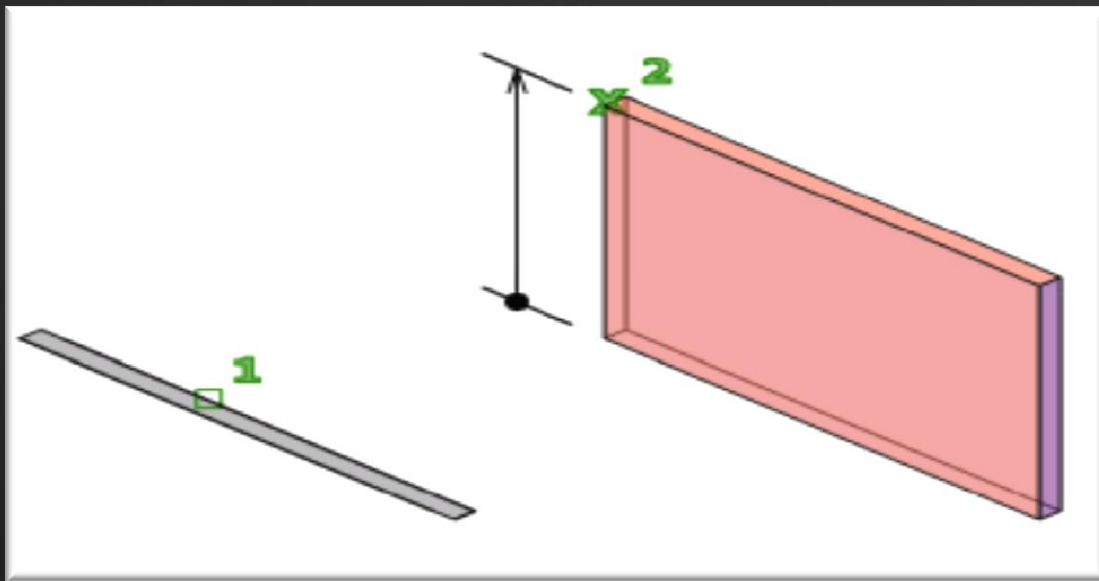


Creating Advanced 3D Geometry

Using AutoCAD



Extrude, Loft, Revolve and Sweep - Surface (and Solid) Types



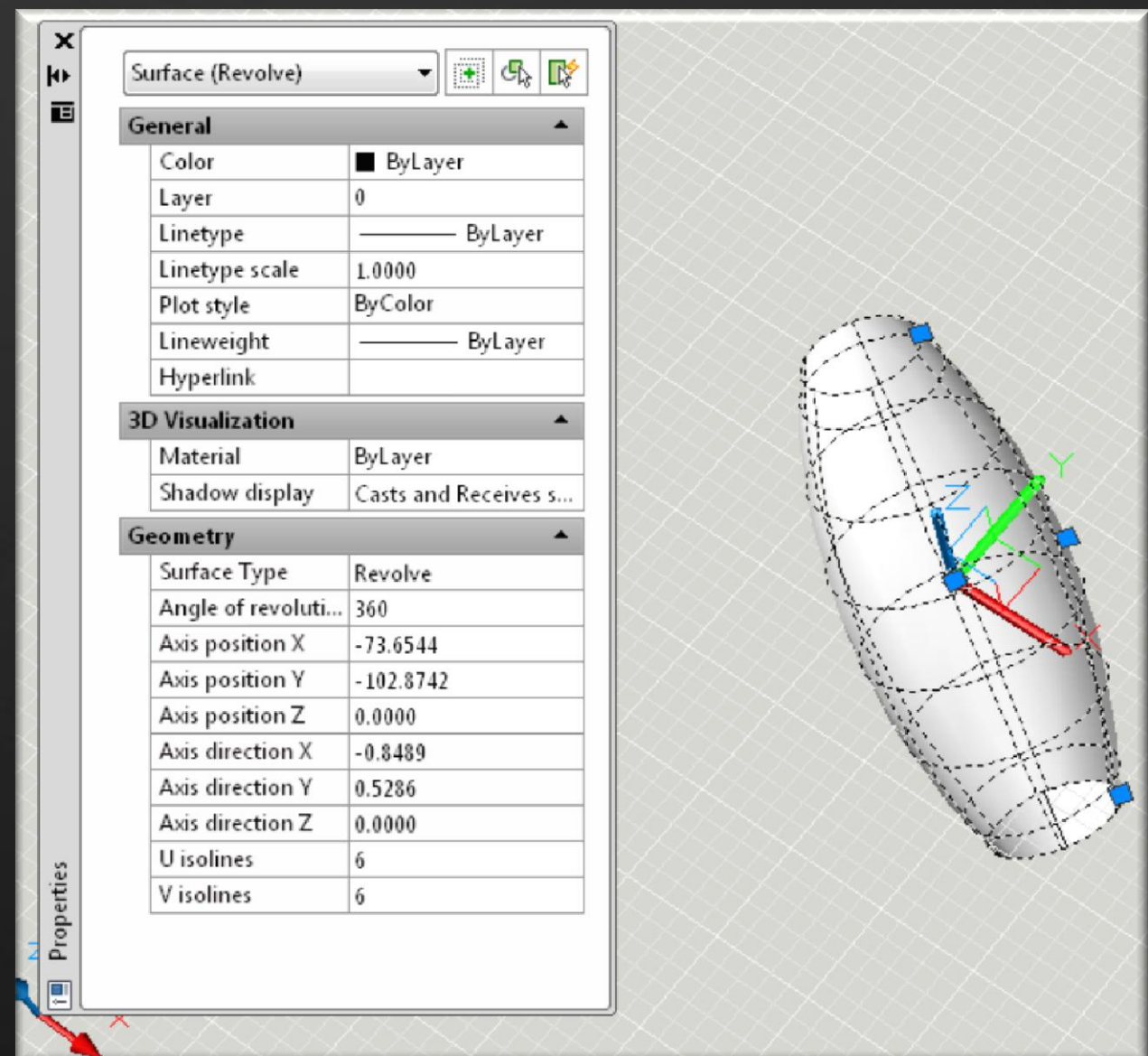
Creating Advanced 3D Geometry

Using AutoCAD



You can modify these types

- Via the Properties Window
- Via Grips
- Construction Geometry Only



Creating Advanced 3D Geometry

Using AutoCAD



Advanced modification not possible

Sub-Object Selection (CTRL+Left Click)

Faces

Edges

Vertices

Creating Advanced 3D Geometry

Show how...



Demo

“Advanced 3D”

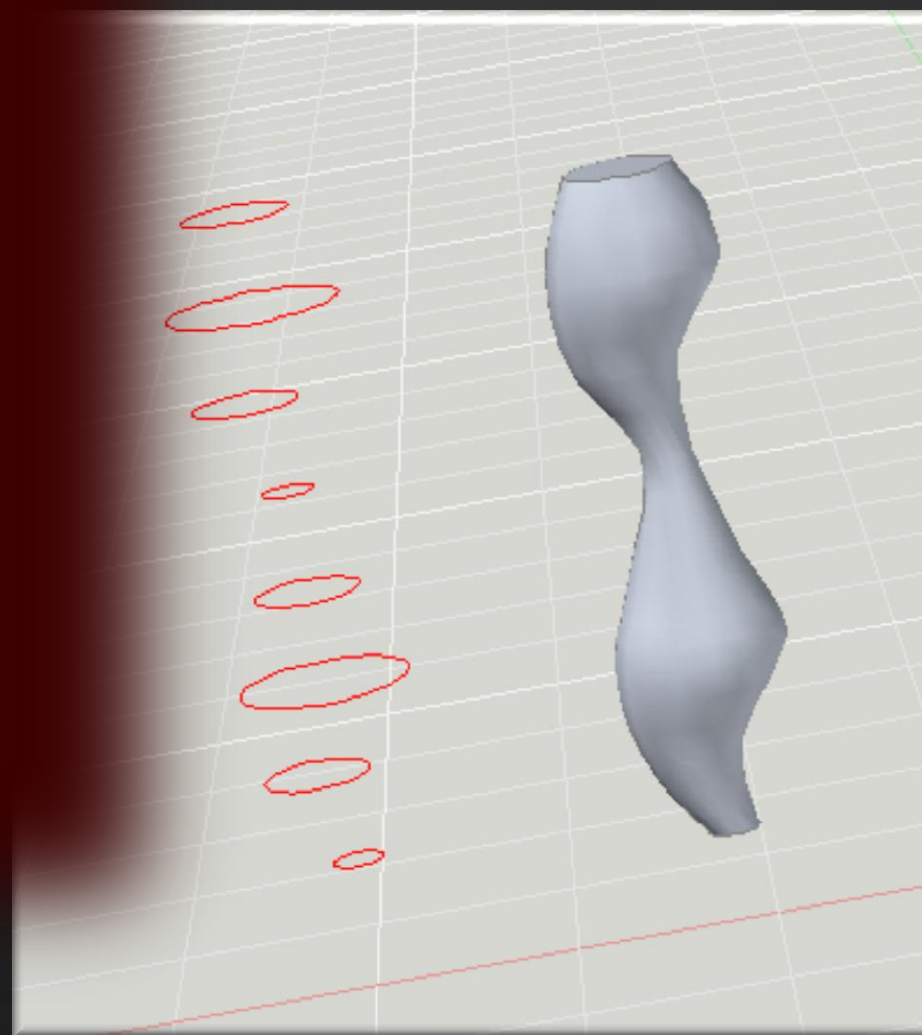
Demonstrating

Extrudes

Lofts

Sweeps

Revolves



Thank you – Any questions?

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