4.500 Introduction to Design Computing
Fall 2008

Solid Modeling

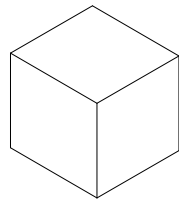## Operations,
Translations and Objects

$\rightarrow$
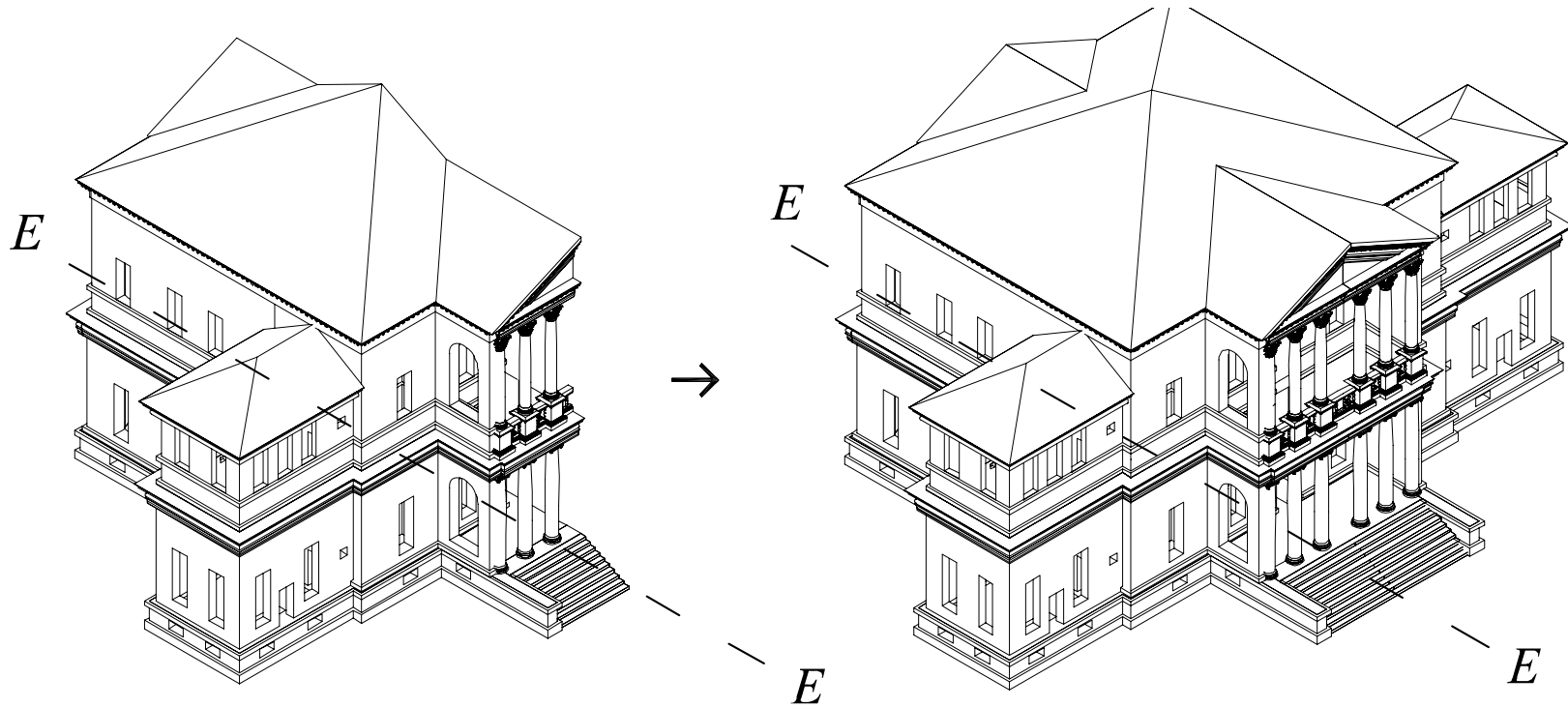
**Solid Modeling is a System
of Assembled Primitives**
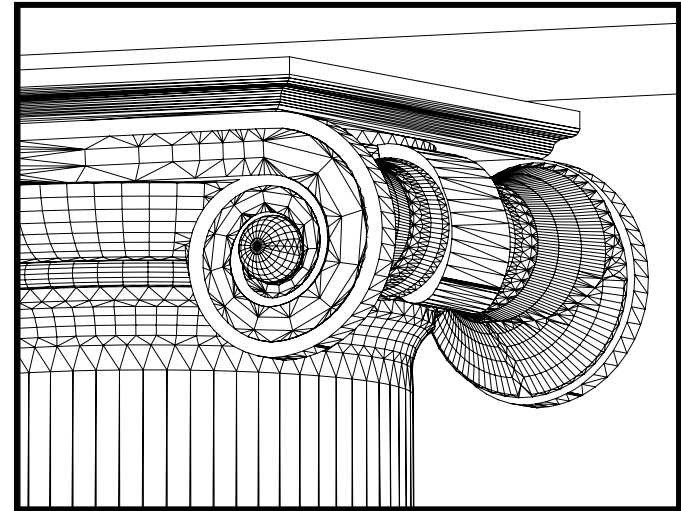
Cylinder
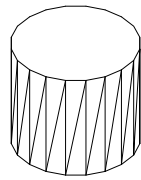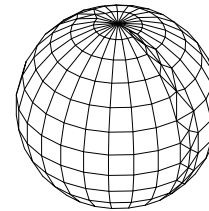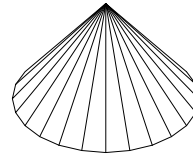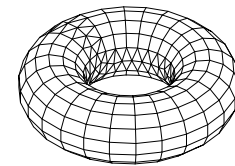
Cone

Torus

Square
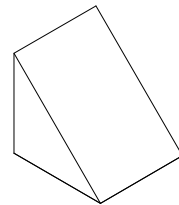
Wedge

Sphere

Coordinate Systems

0,10,10

10,10,10

0,0,10

0,10,0

UCS
User Coordinate
System

10,0,10

10,10,0

0,0,0

z   y

x

10,0,0
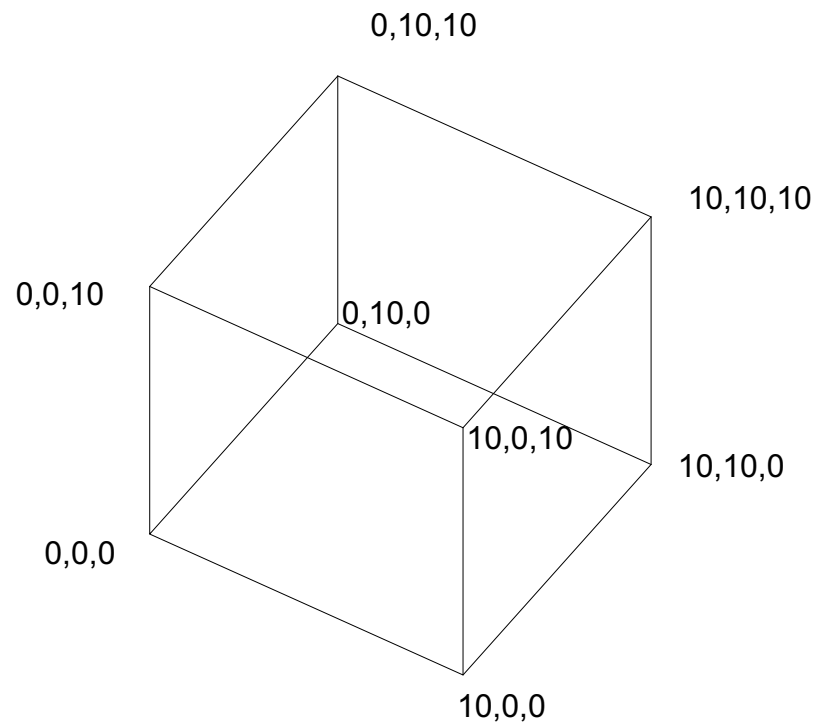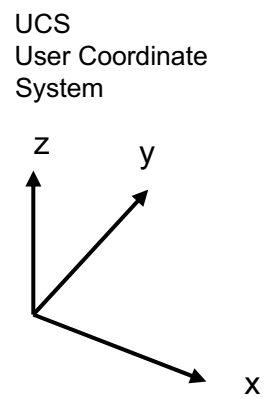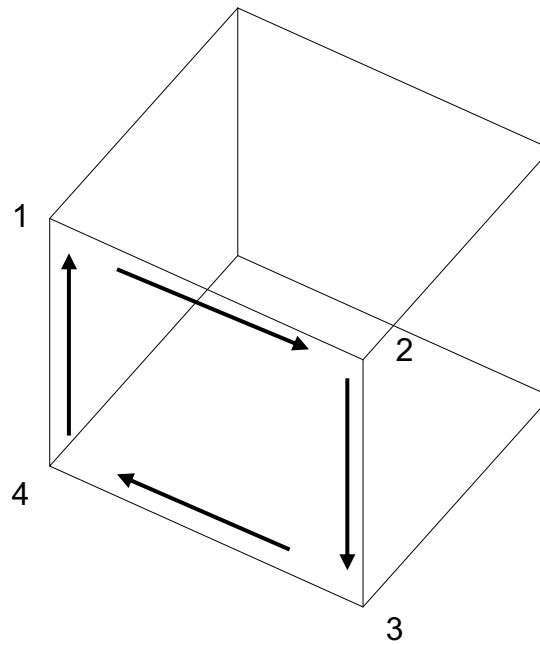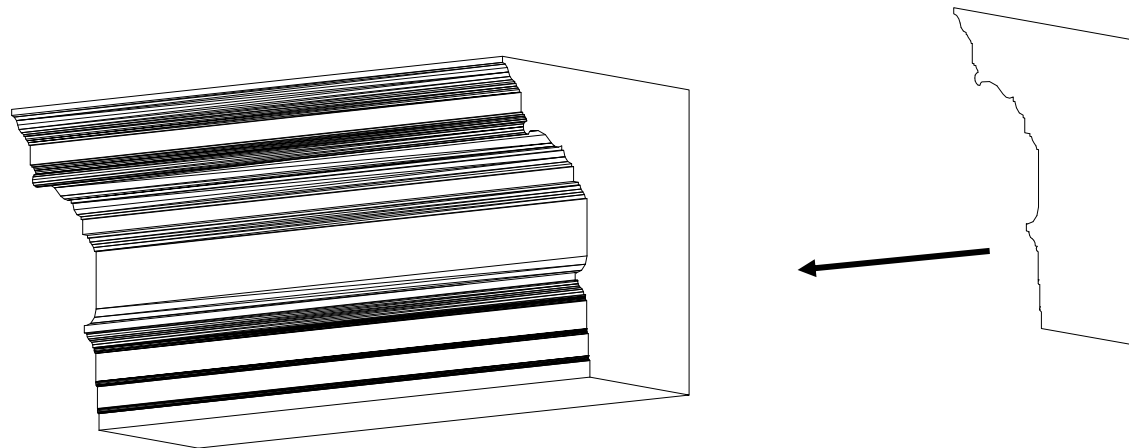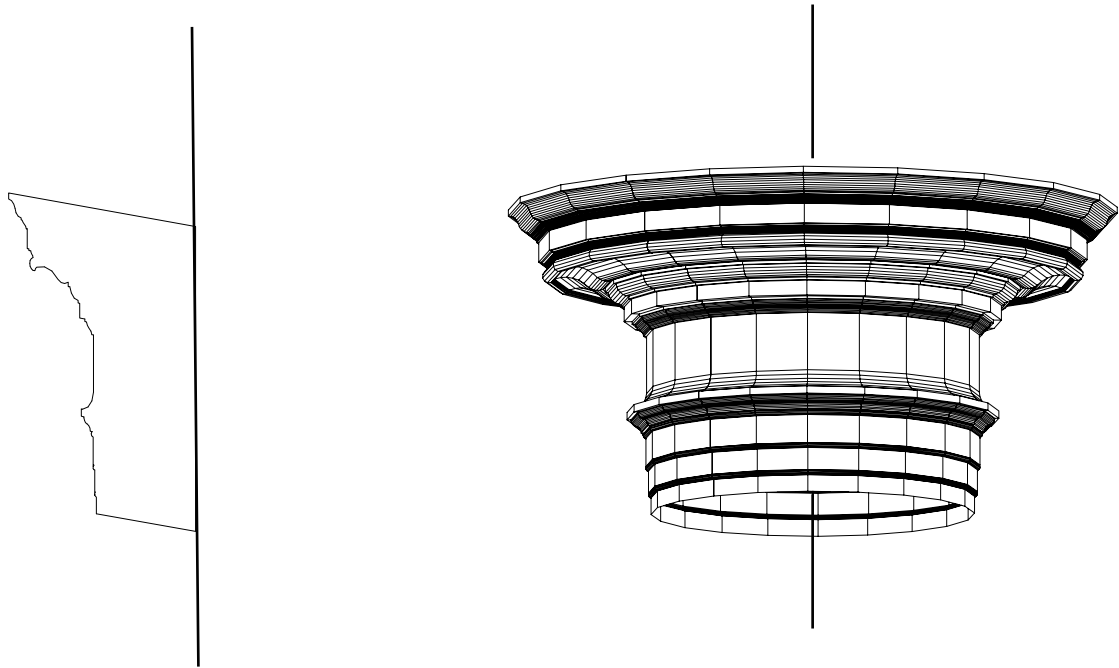
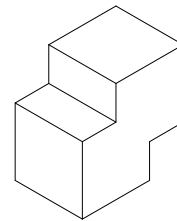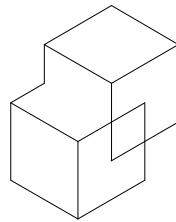# Coordinate Systems

UCS
User Coordinate
System
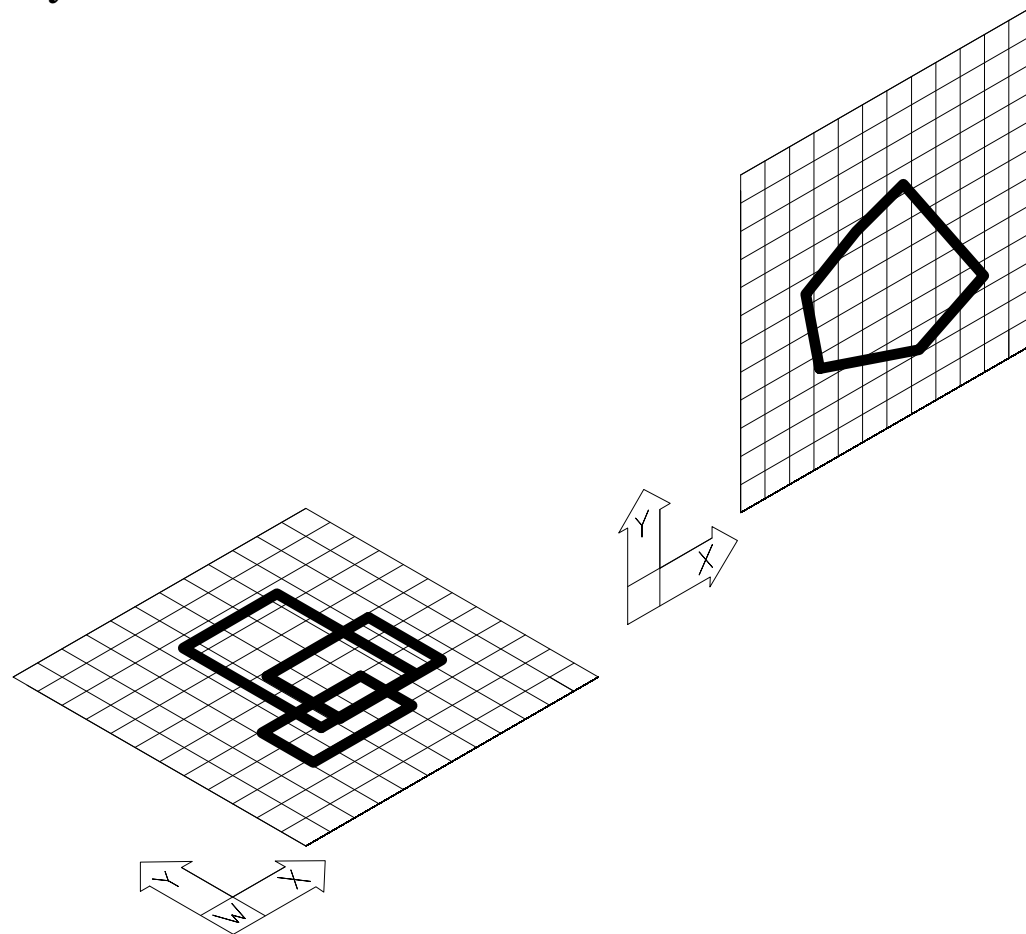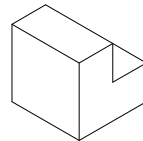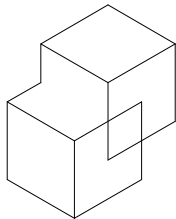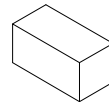
Direction of Faces
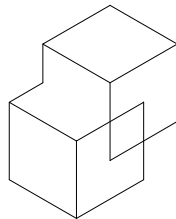
Extrusion

Revolution

Boolean Operations

British Mathematician
George Boole

Union
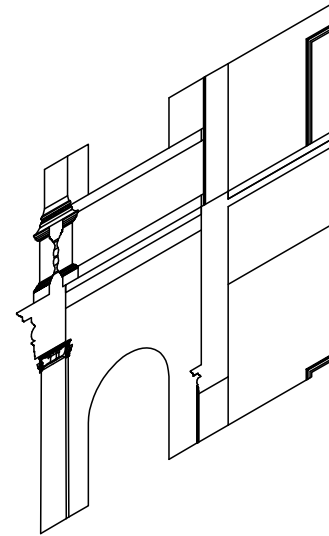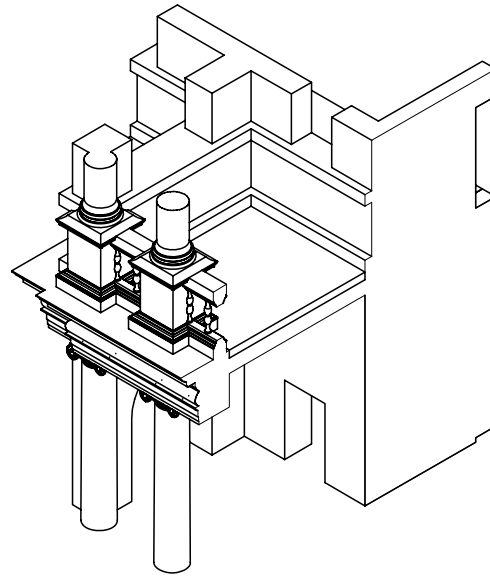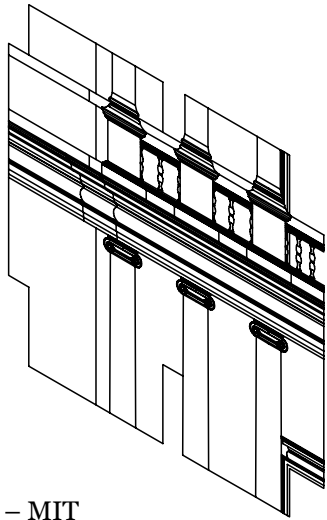
Subtraction

Intersection

2D Projections

Solid Modeling

Problems (Large computer models)

- Slow
- Solid Modeling is Hard to Manipulate
- Data Representation is heavy

Solution

- Reduce amount of geometry
- Subdivide Geometry

Good Computer Modeling

- Select Key Places to Model in Detail

- Break parts into layer understandable categories

- Hide often to check for intersections

- Accuracy = Reality