

# 21 – Polygonal Modeling (Data structures, Triangle Meshes, Subdivision Surfaces)

# Regular Polygons



# Regular Planar Tilings



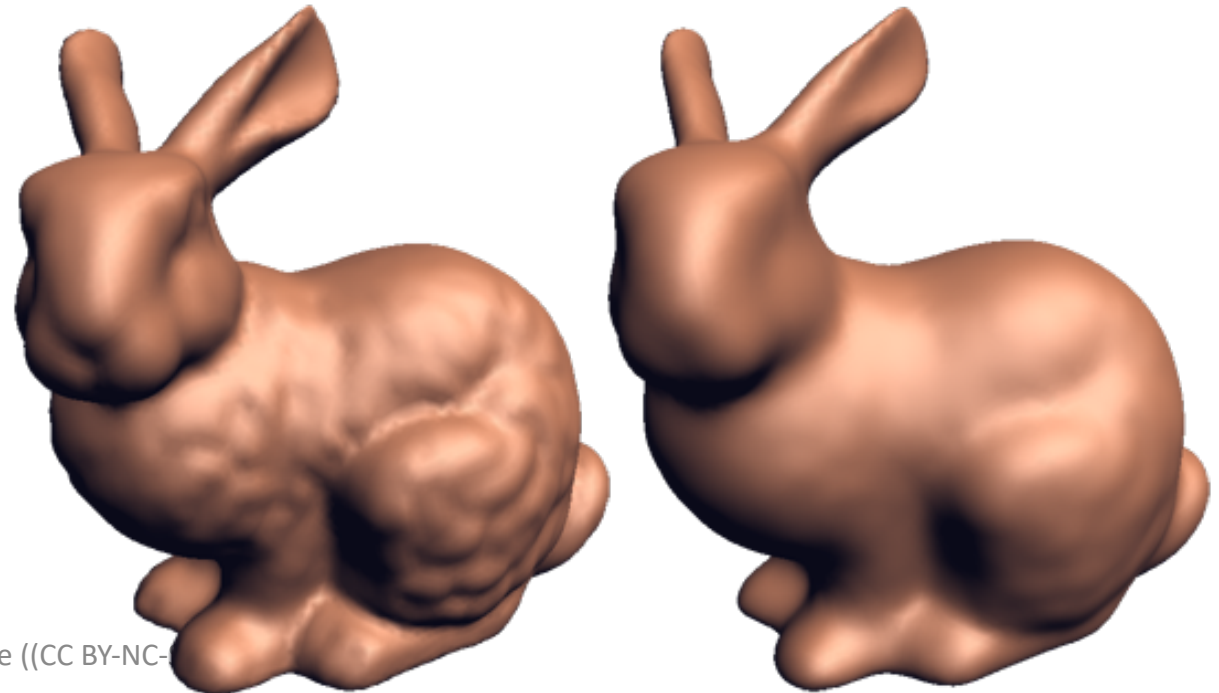
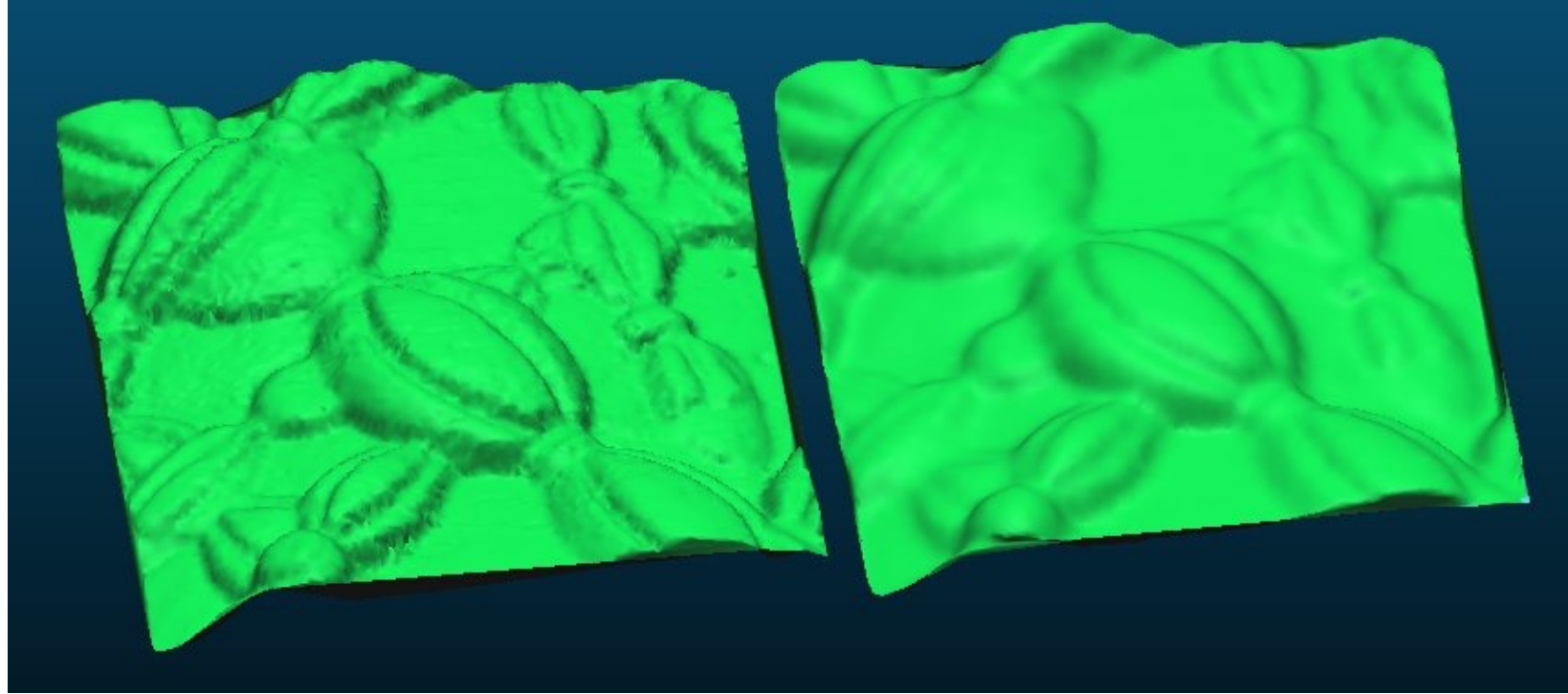
# Platonic Solids

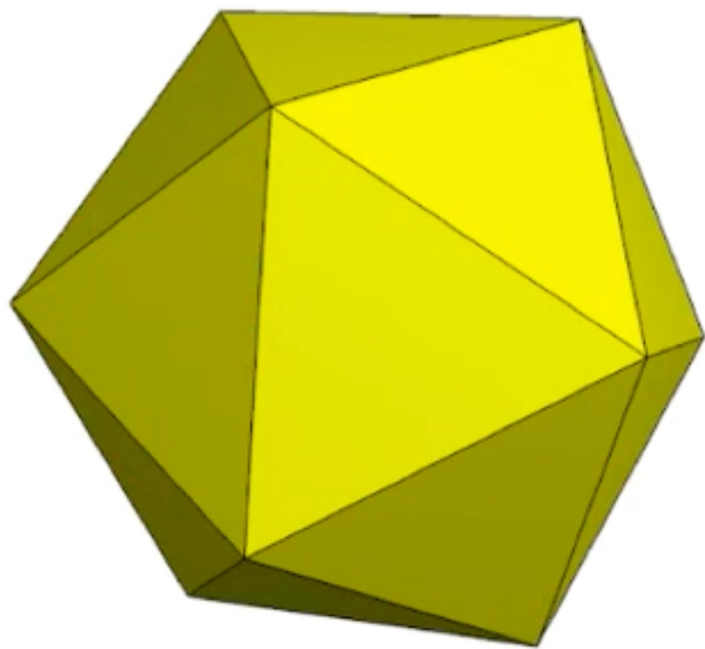


# Polyhedrons



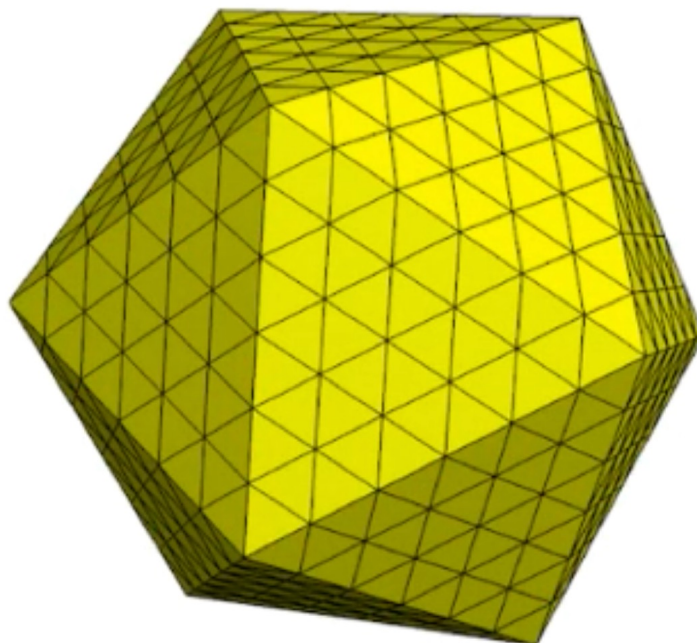




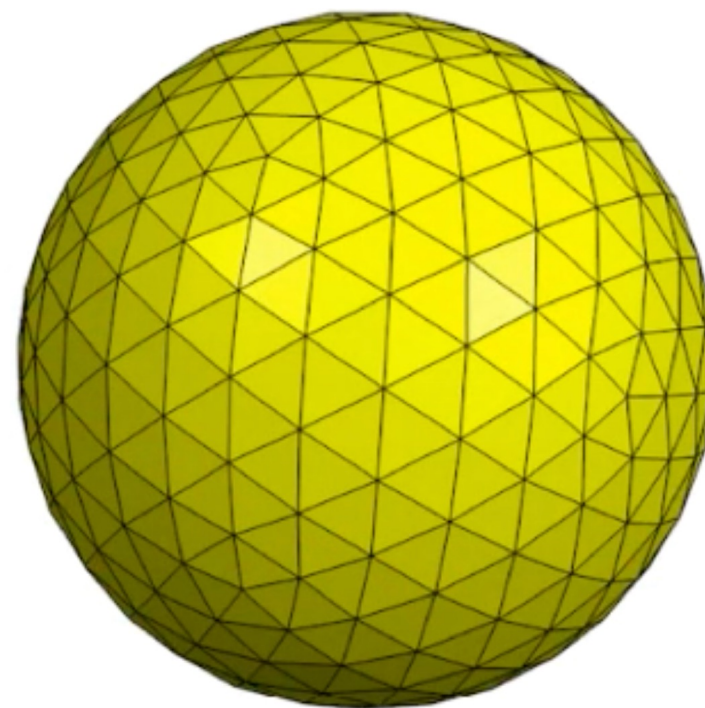


**Icosahedron**

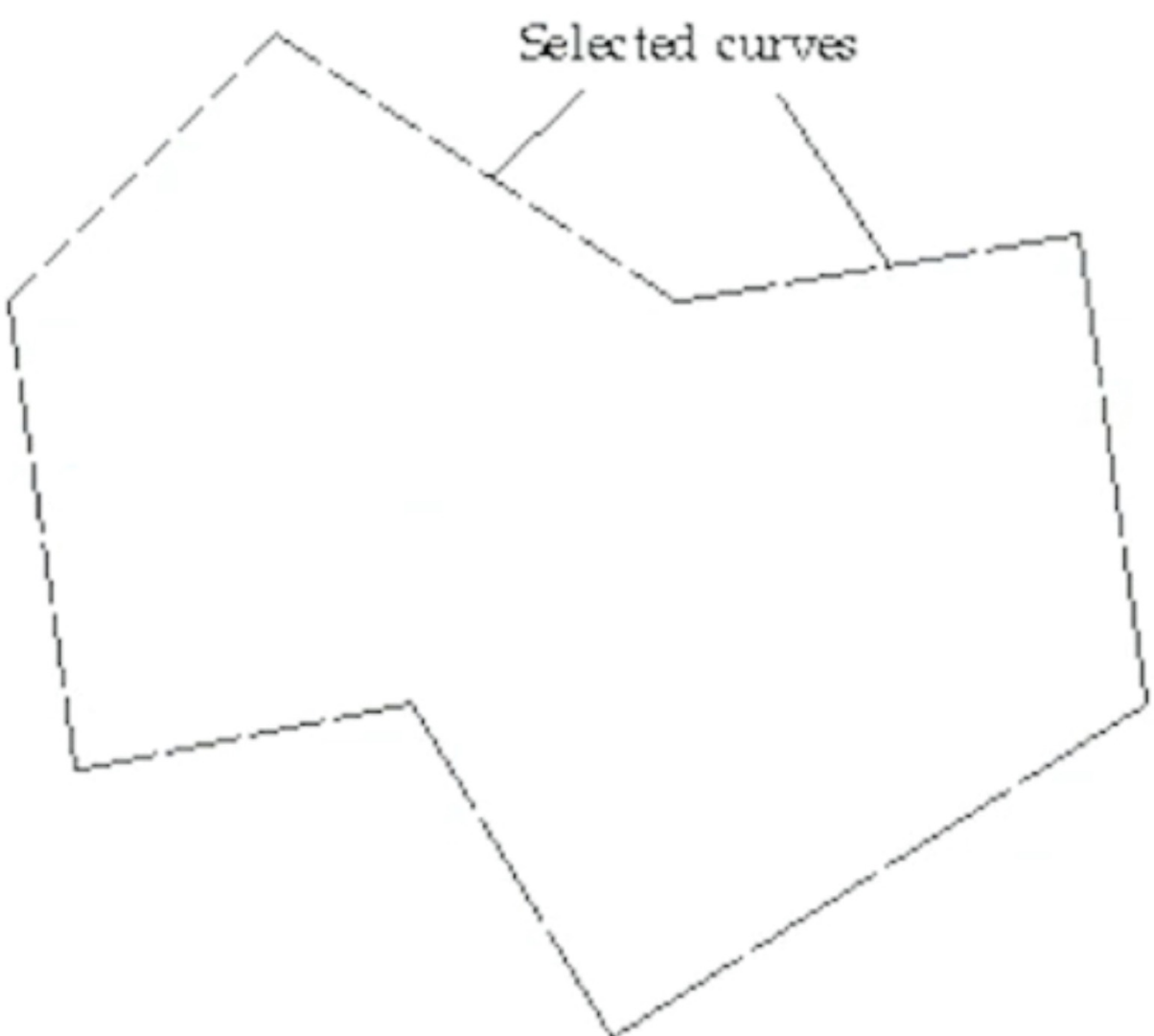
+



**6-frequency  
subdivision**

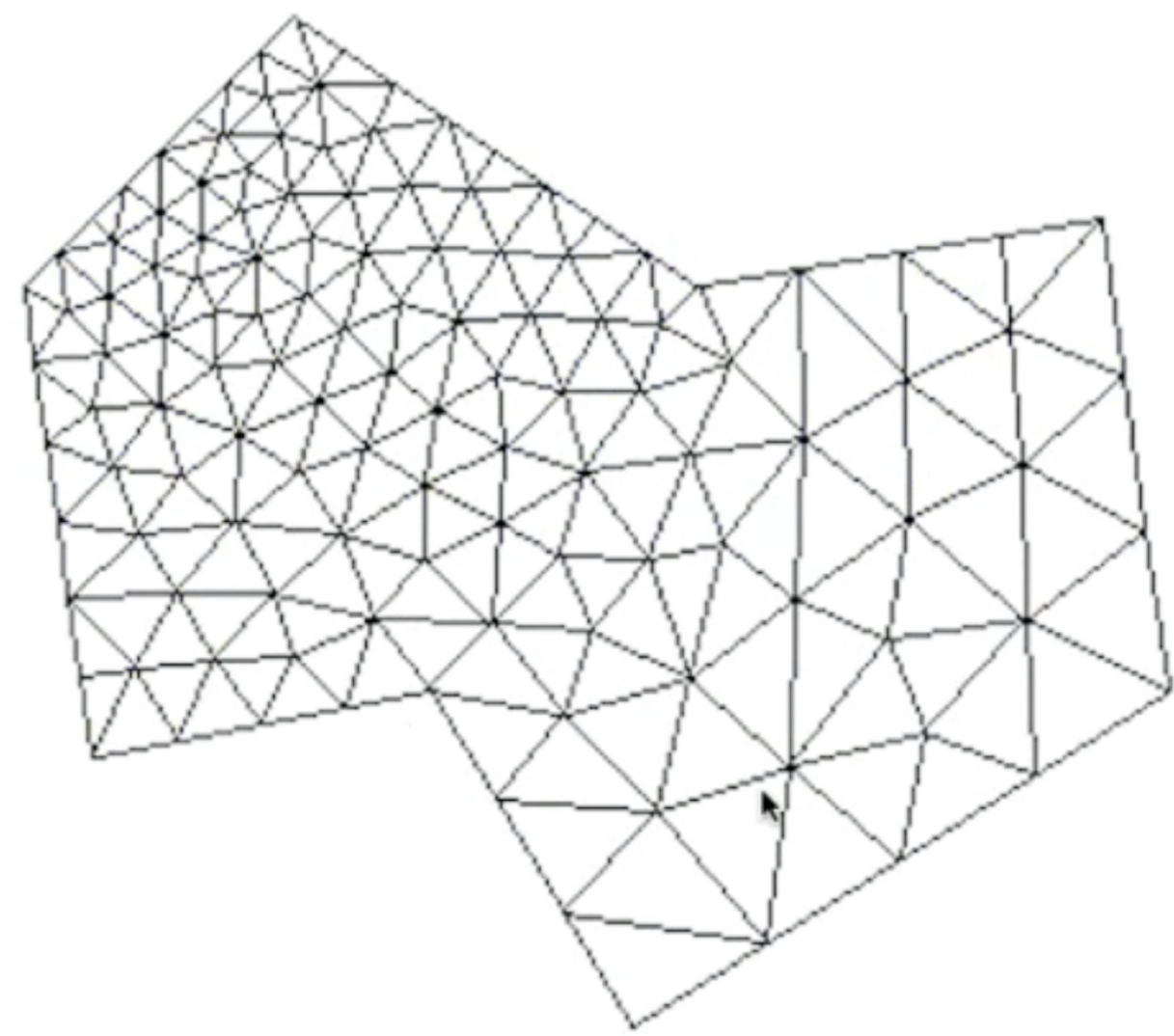


**Vertices projected  
onto sphere**



Selected curves

Boundary of the mesh region



Generated mesh

# Representing Polyhedra (Meshes)

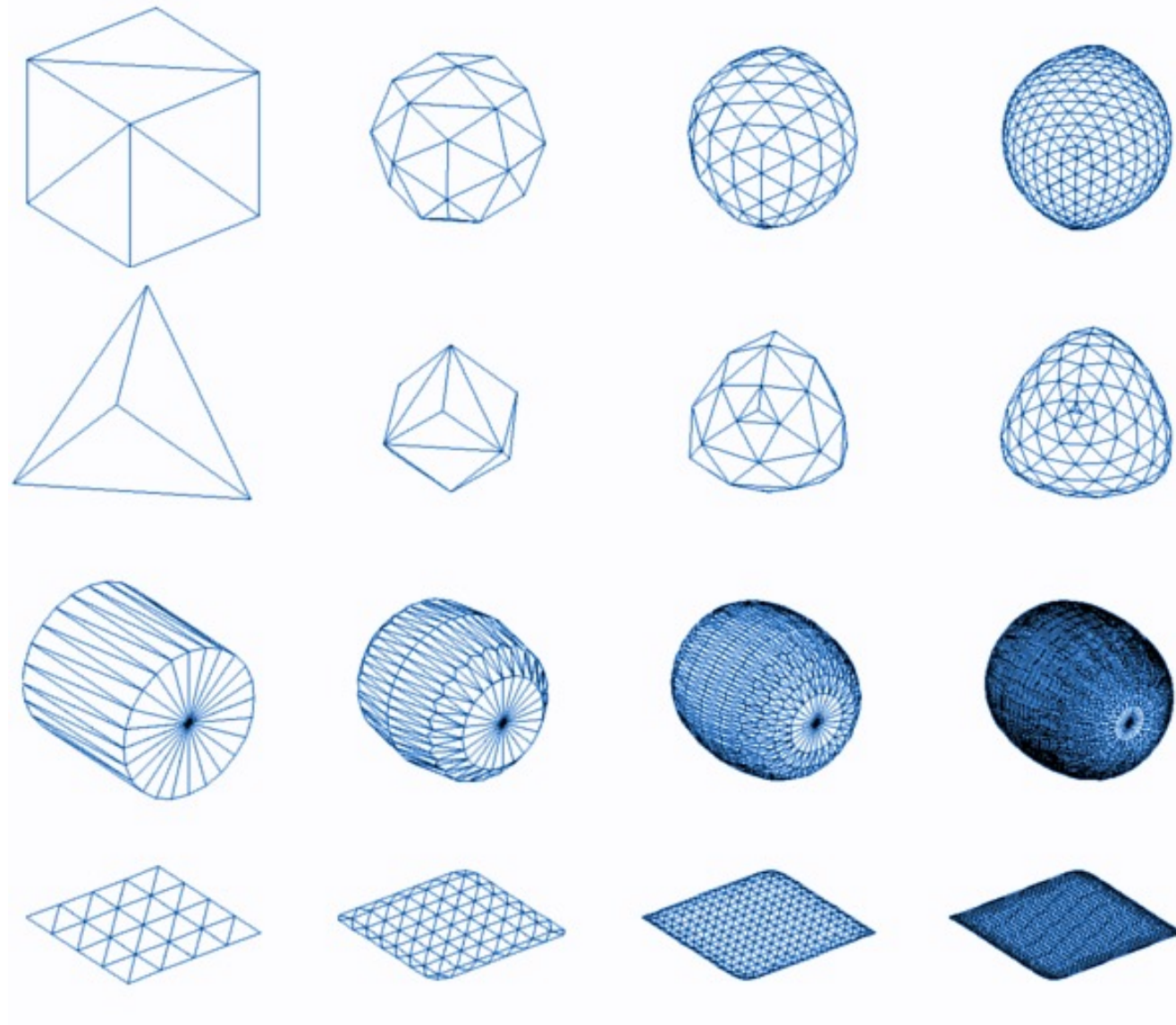


# Subdivision Surfaces

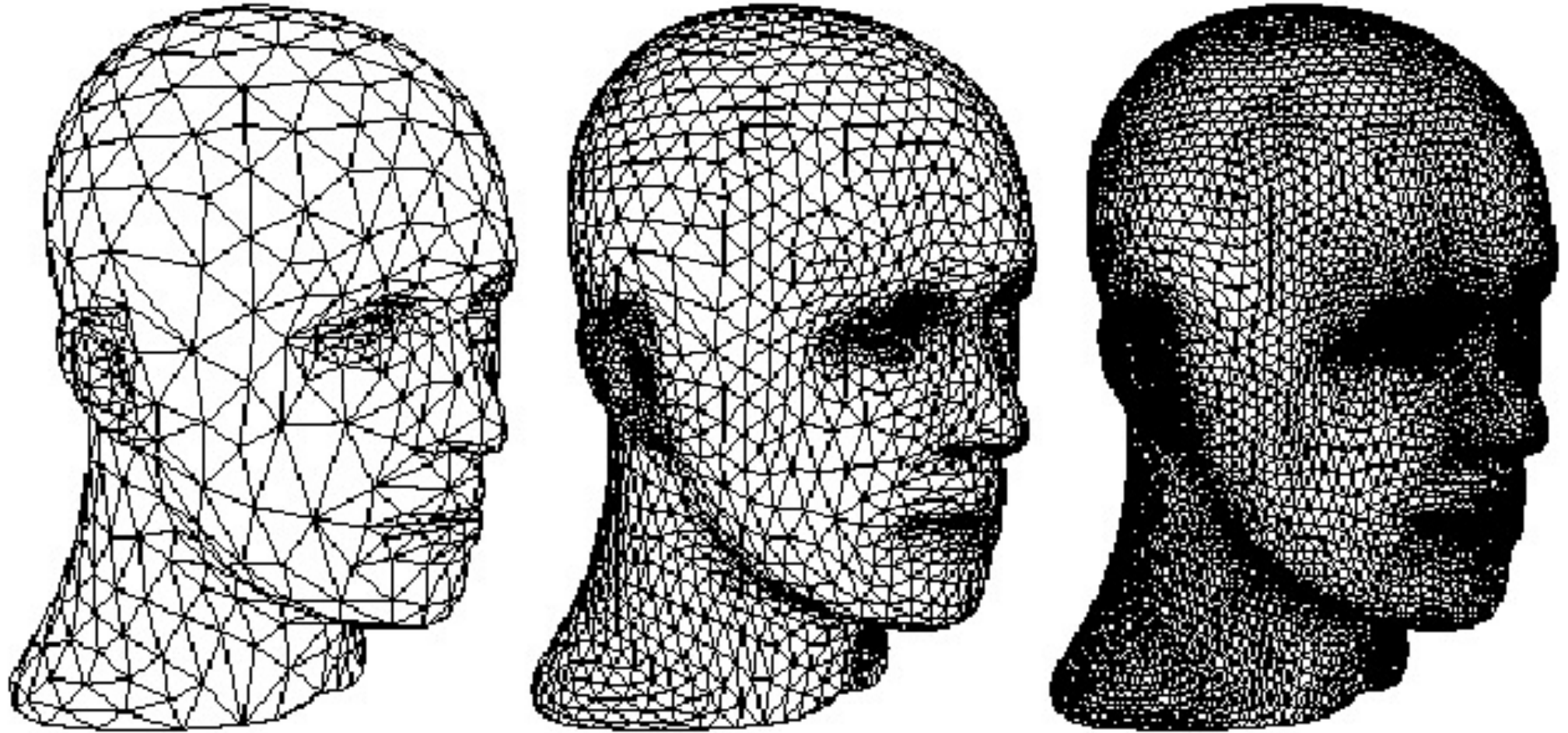




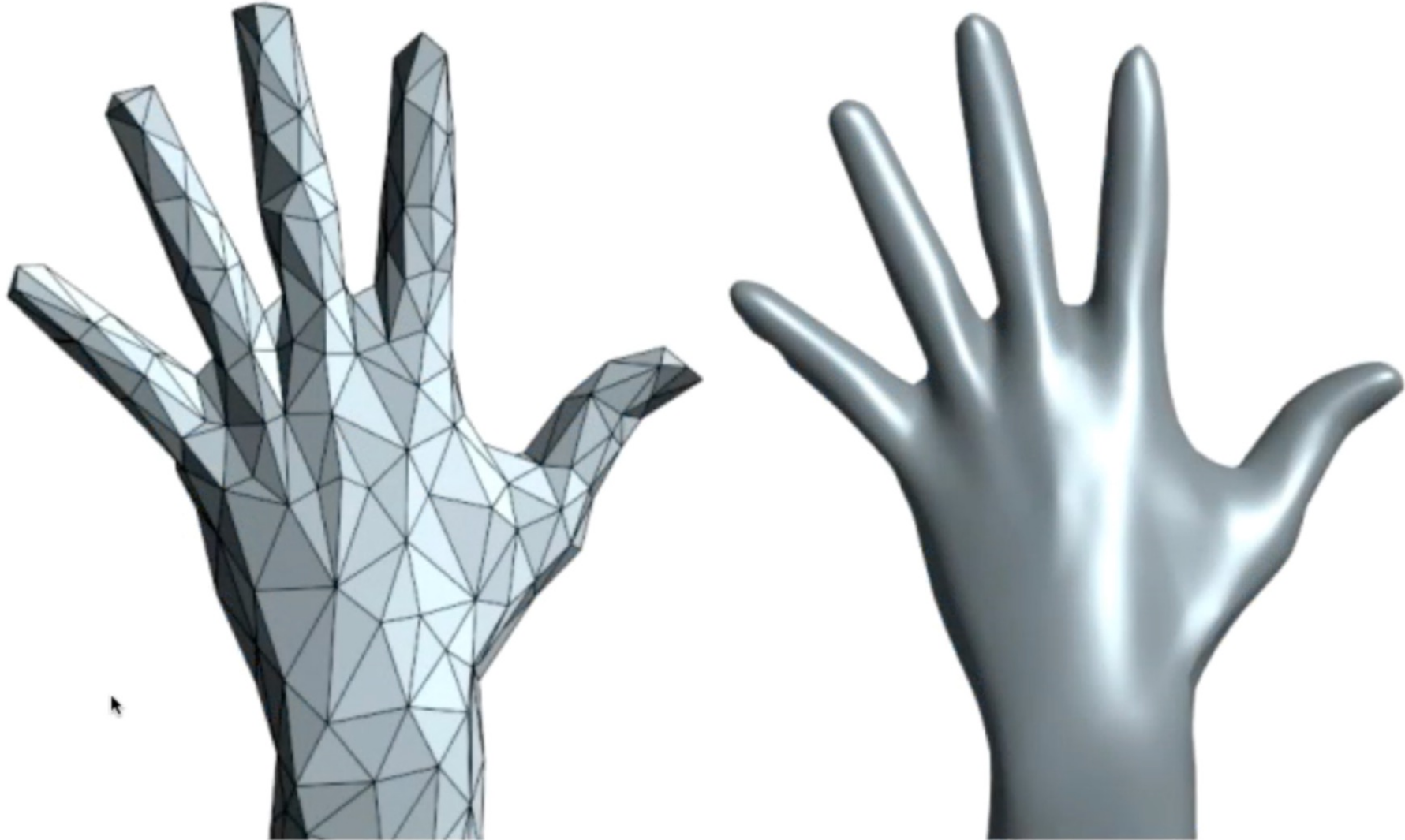
# Loop Subdivision



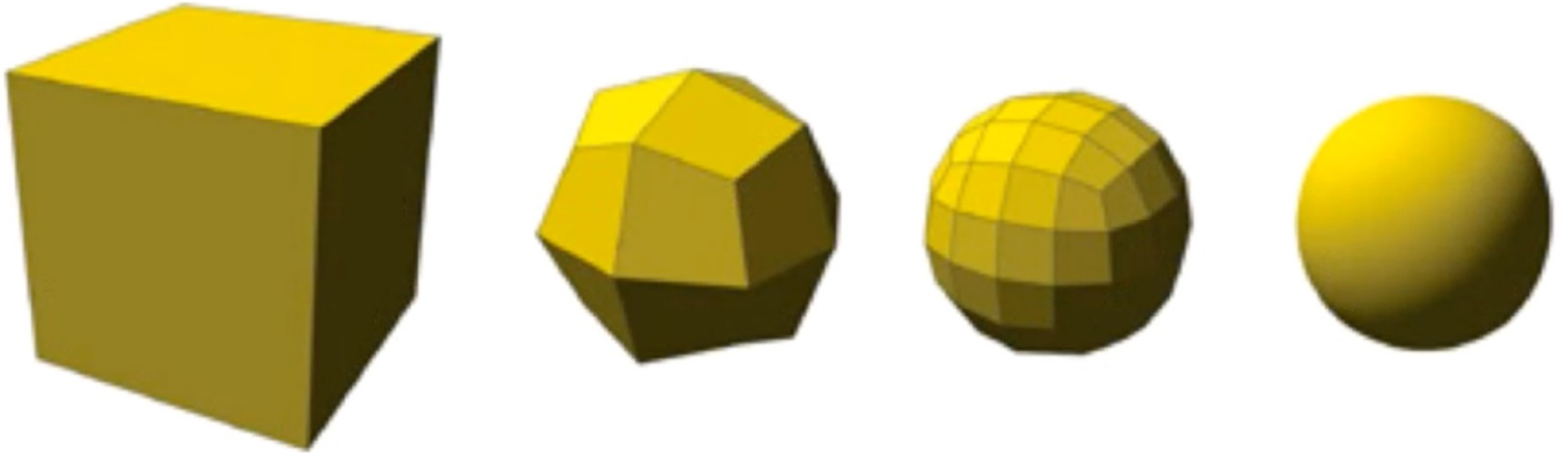
# Loop Subdivision



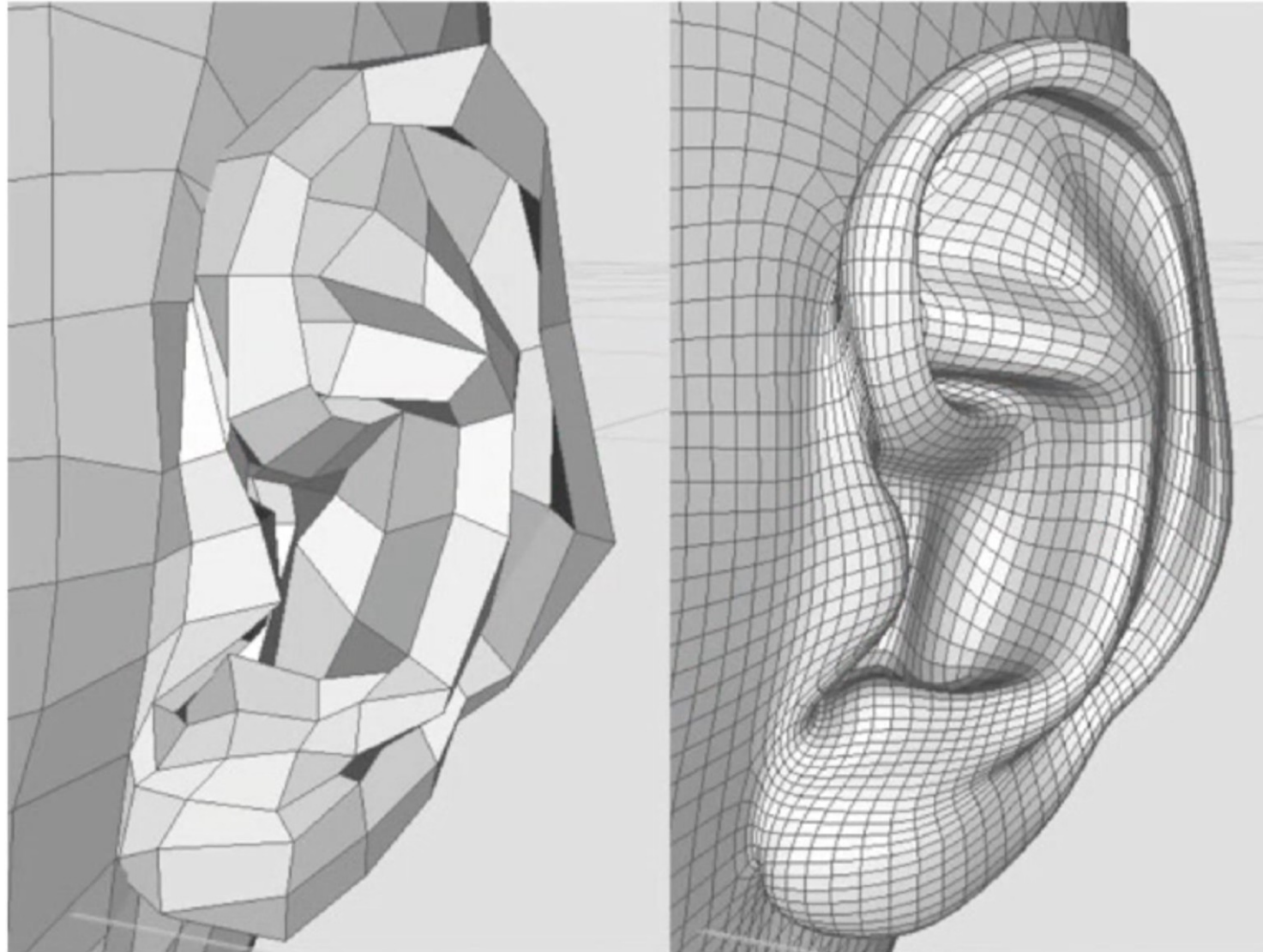
# Loop Subdivision



# Catmull-Clark Subdivision



# Catmull-Clark Subdivision





# Catmull-Clark Subdivision: Sharp Edges

