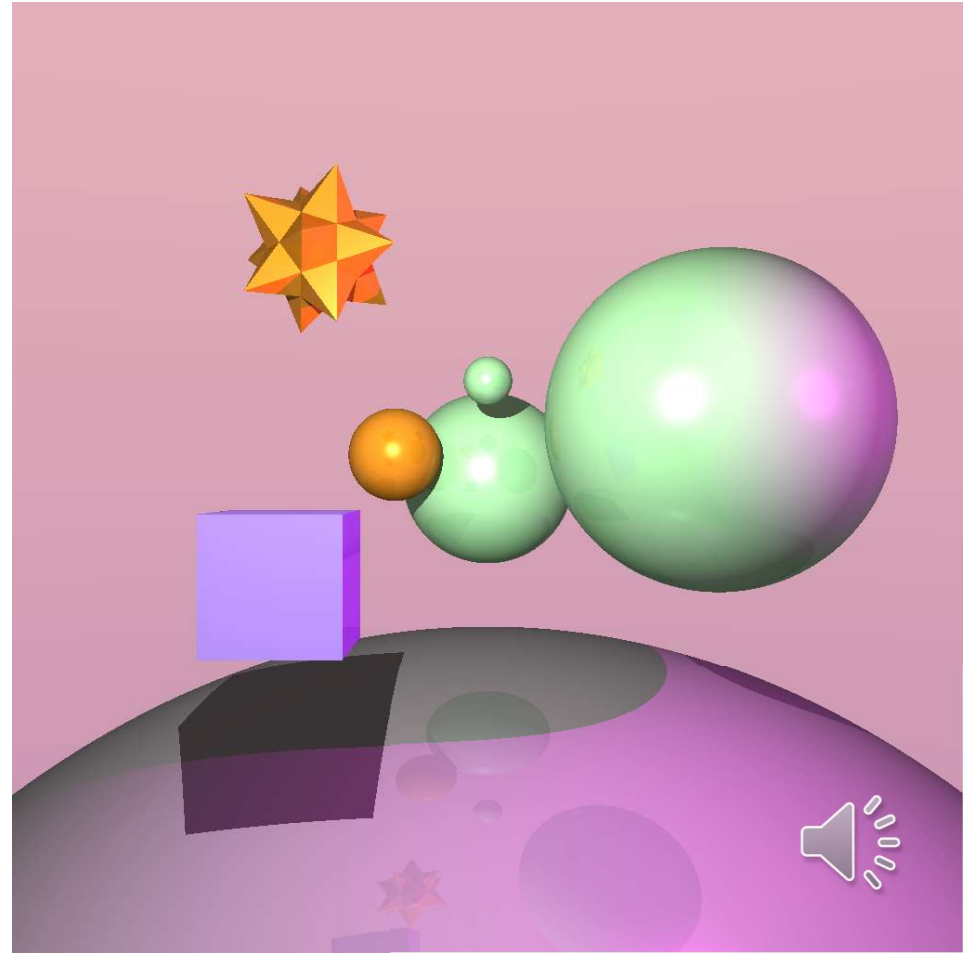
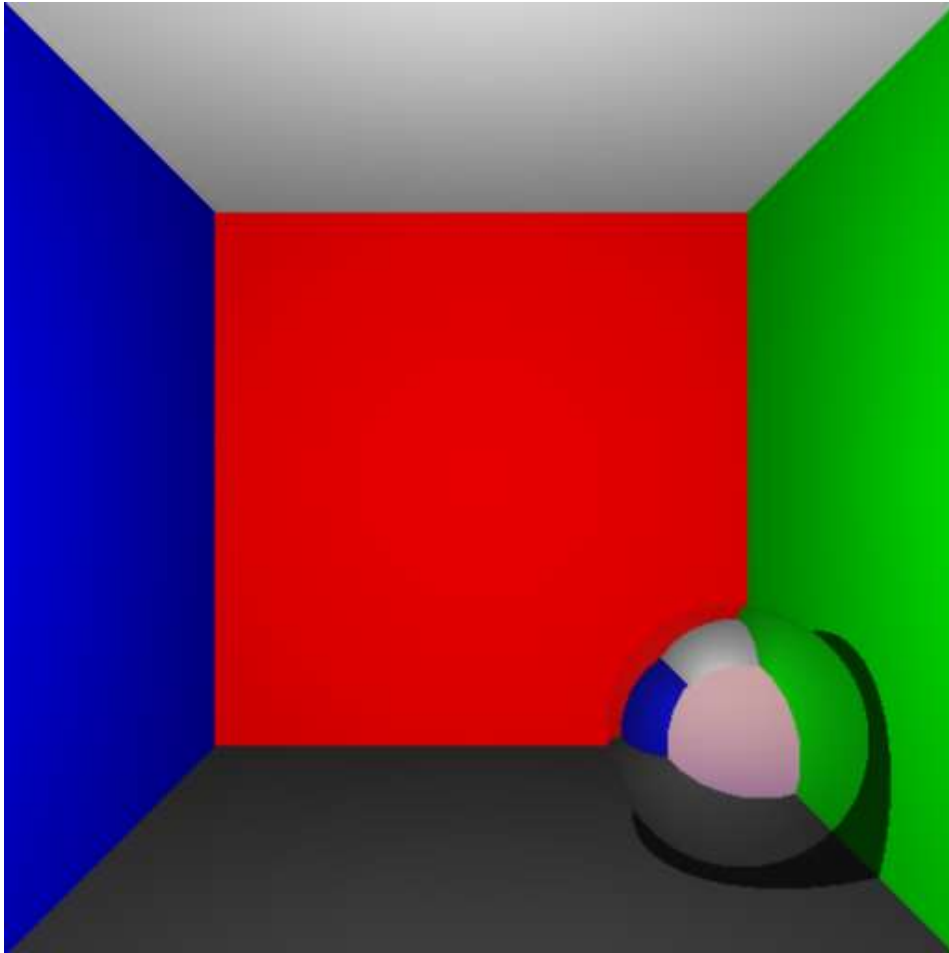


# Ray Tracer

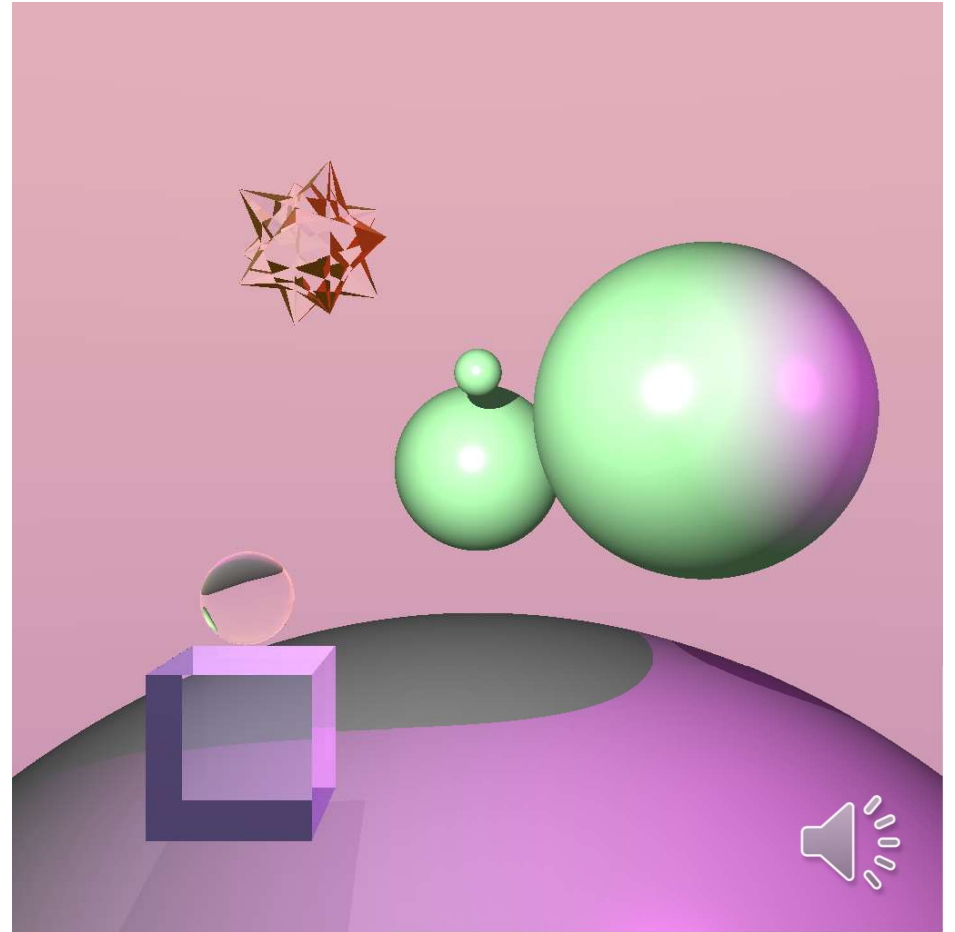
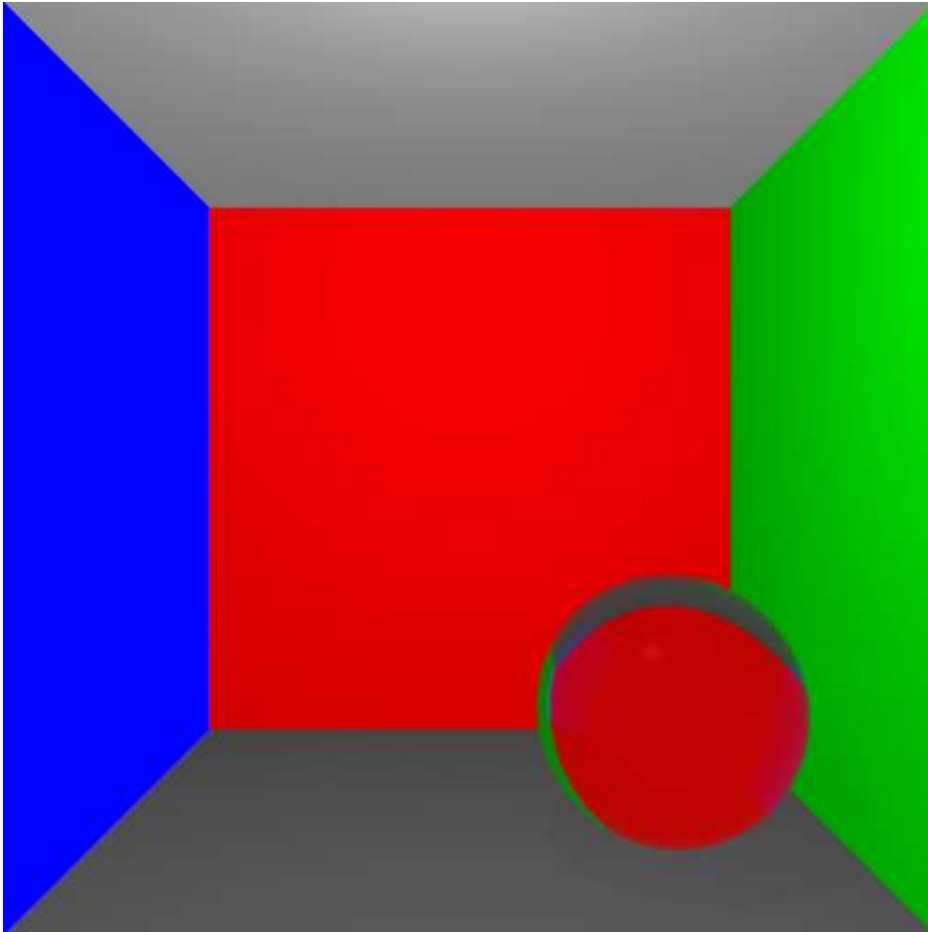
Monument Valley



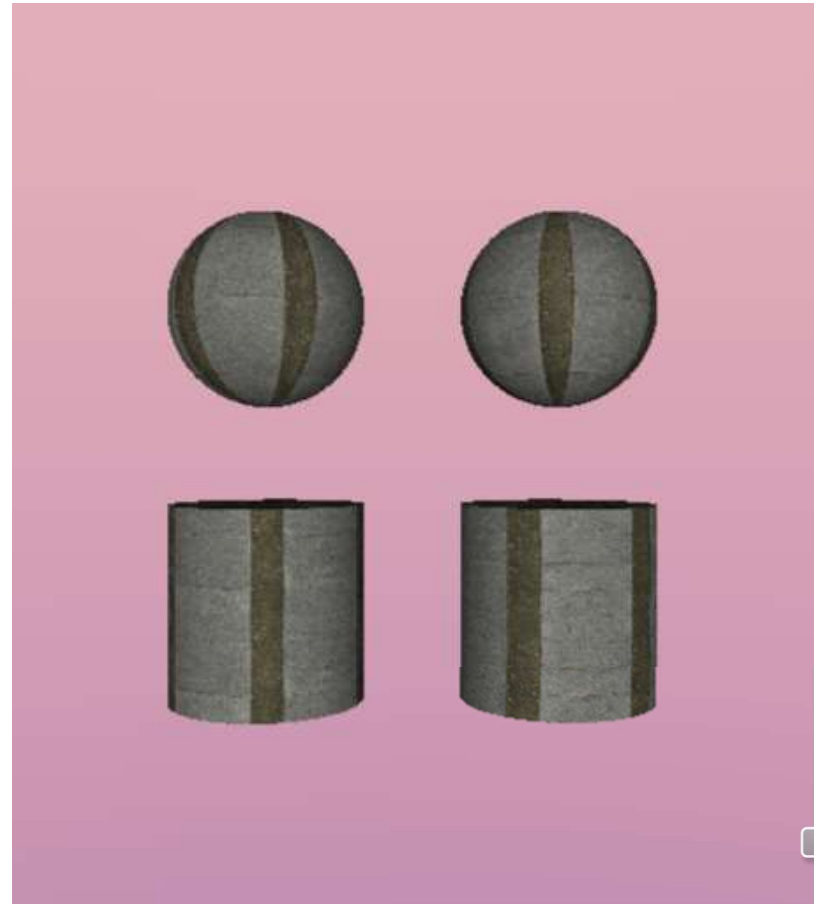
## Mirror Reflections

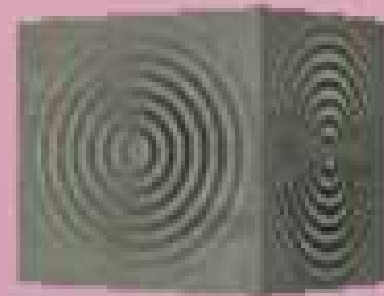
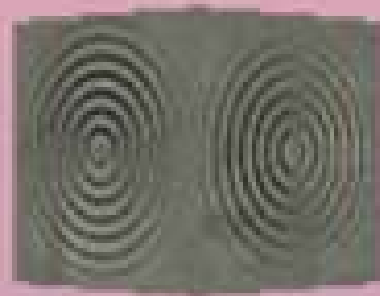
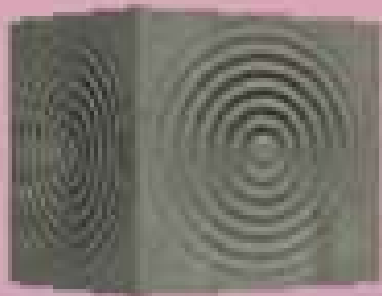


# Refraction



# Texture Mapping



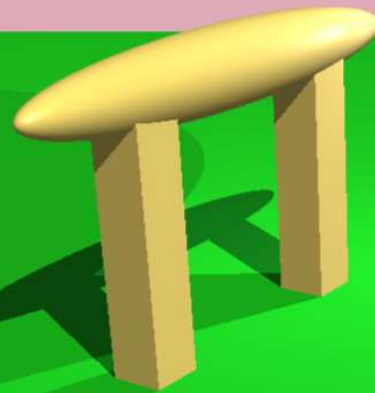
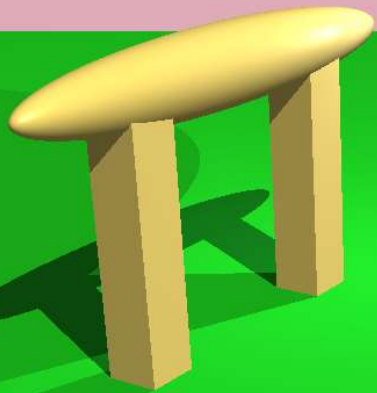


Normal Mapping



Disabled

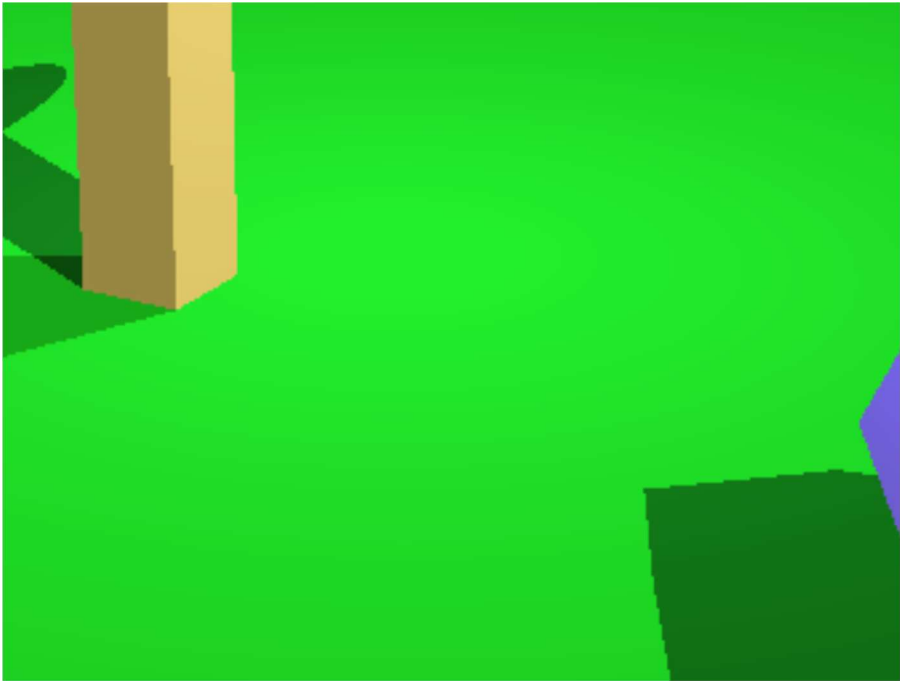
Enabled



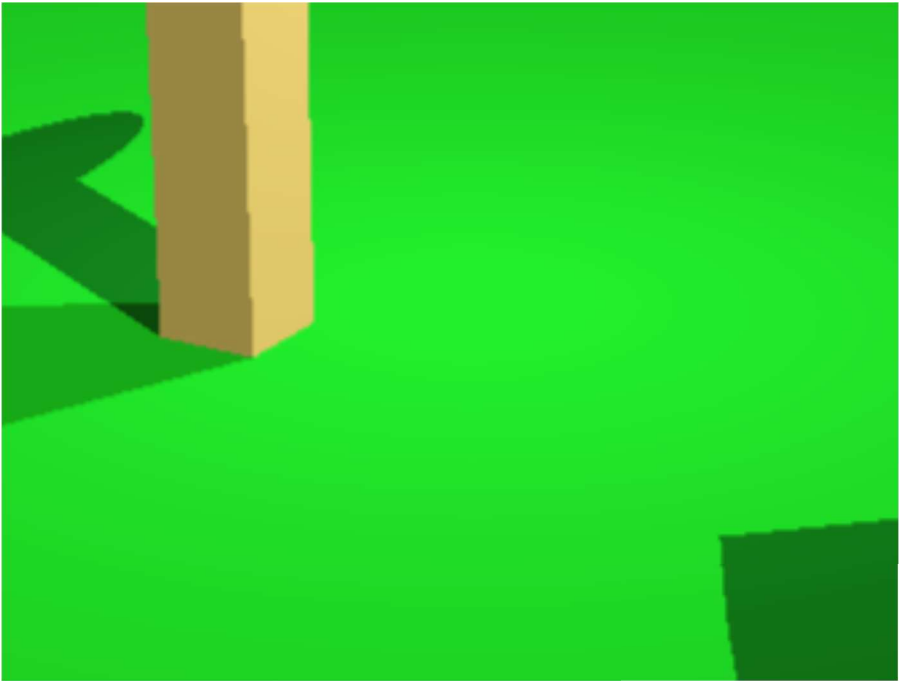
Anti Aliasing



Disabled



Enabled

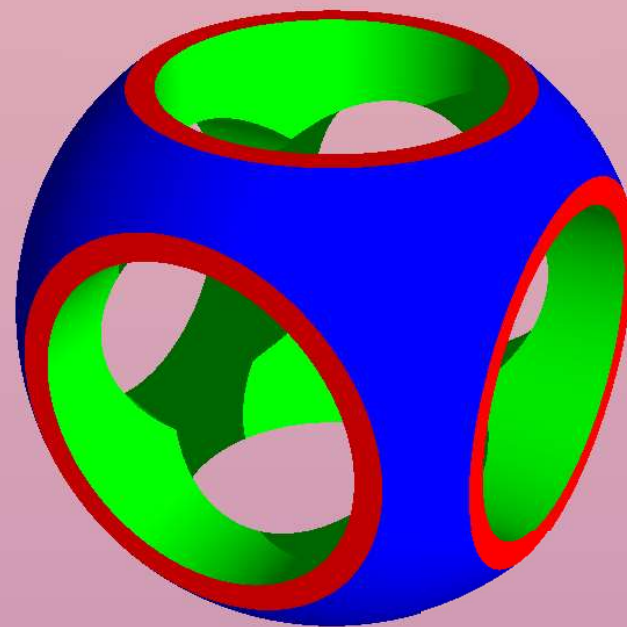
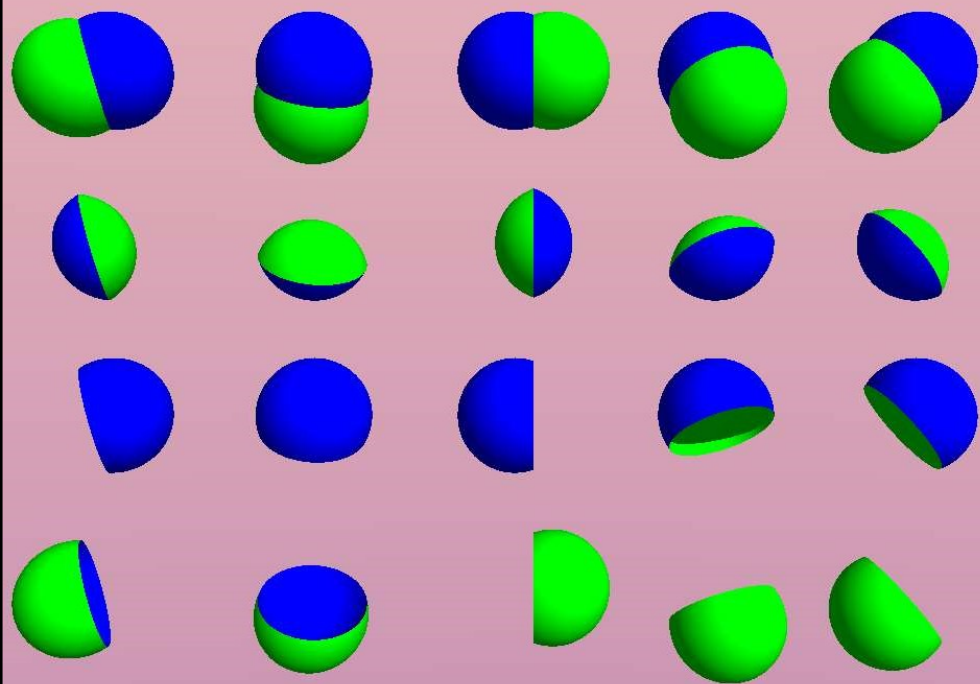




Phong Shading (Normal Interpolation)

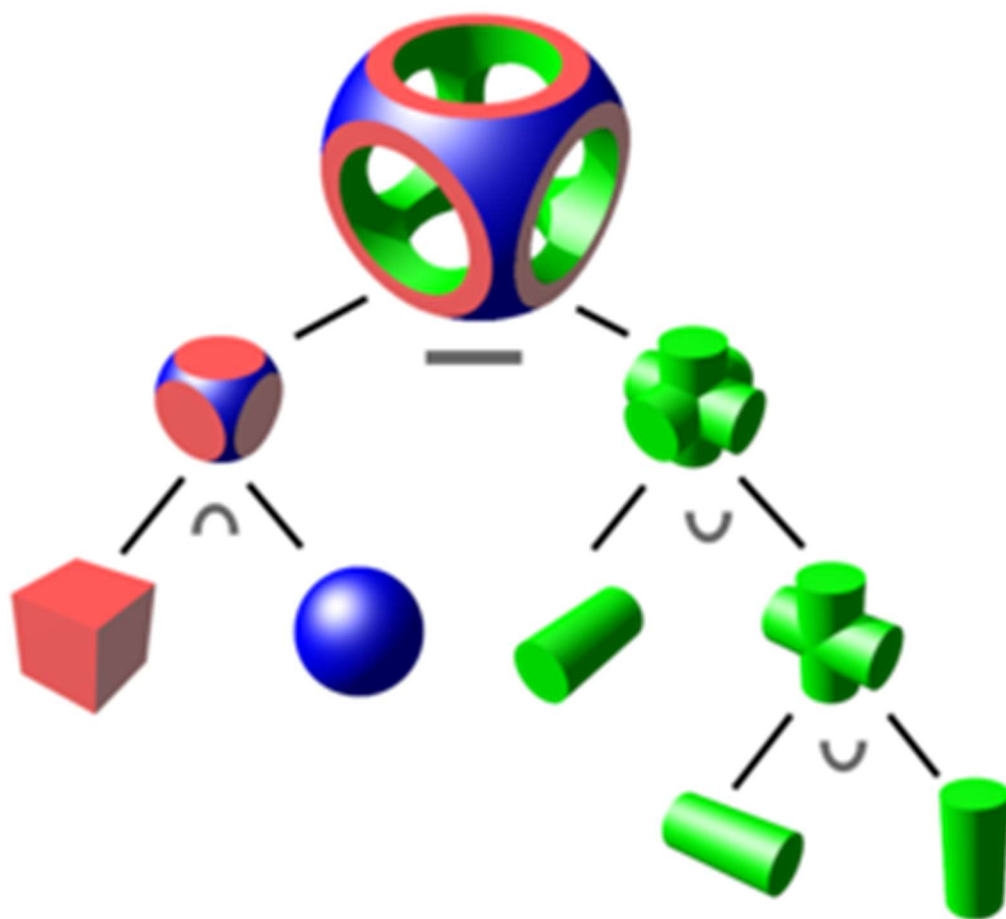




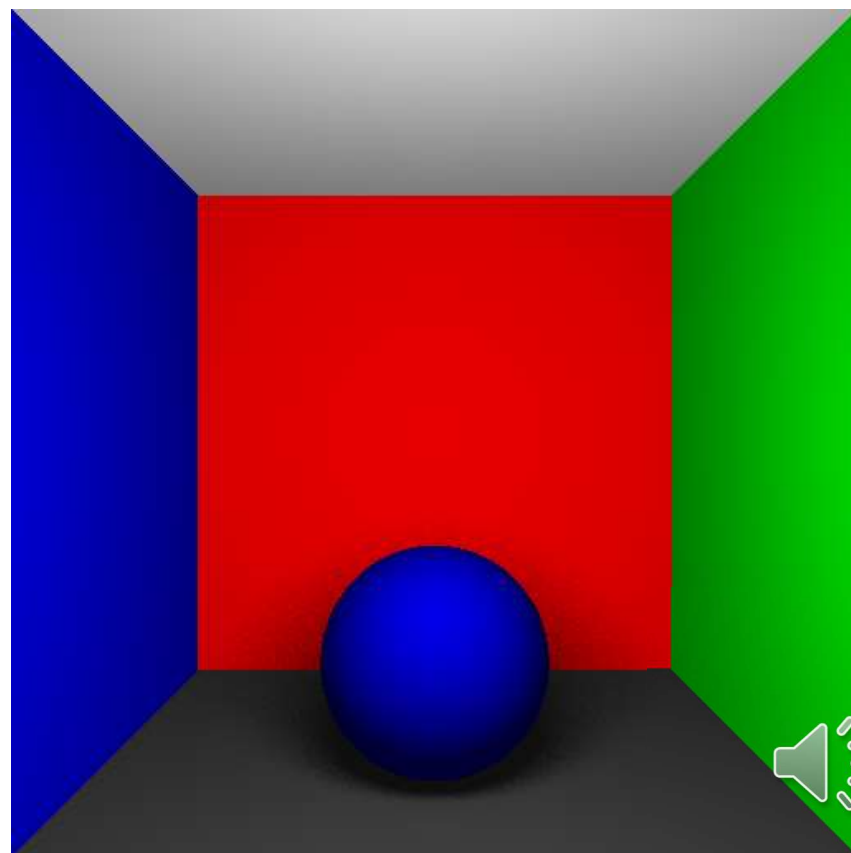
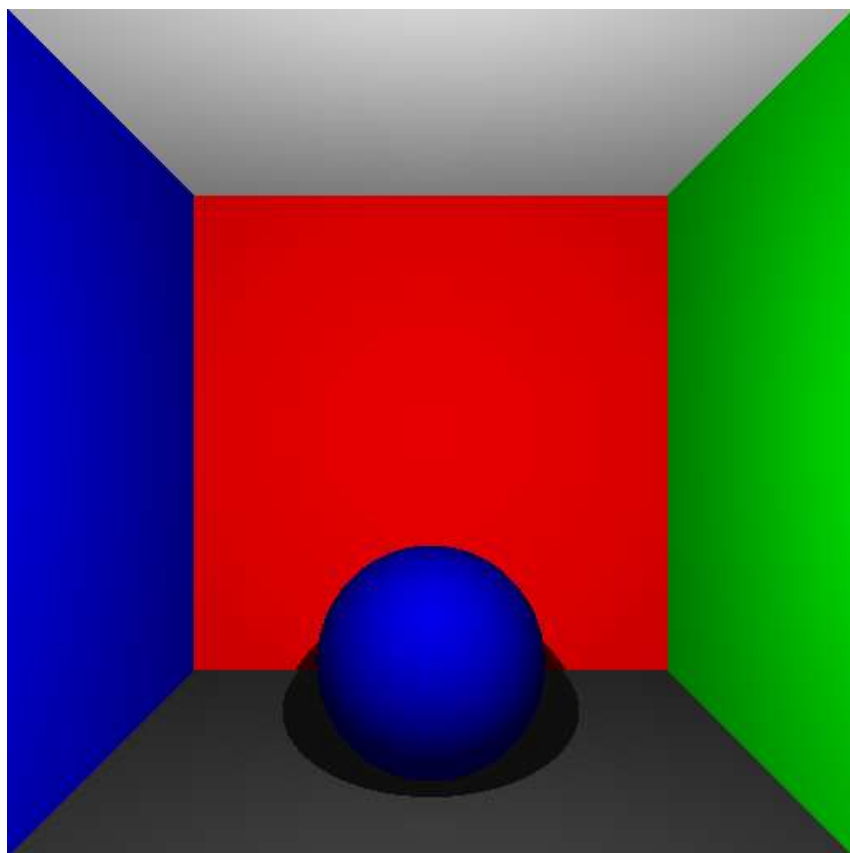


Constructive Solid Geometry

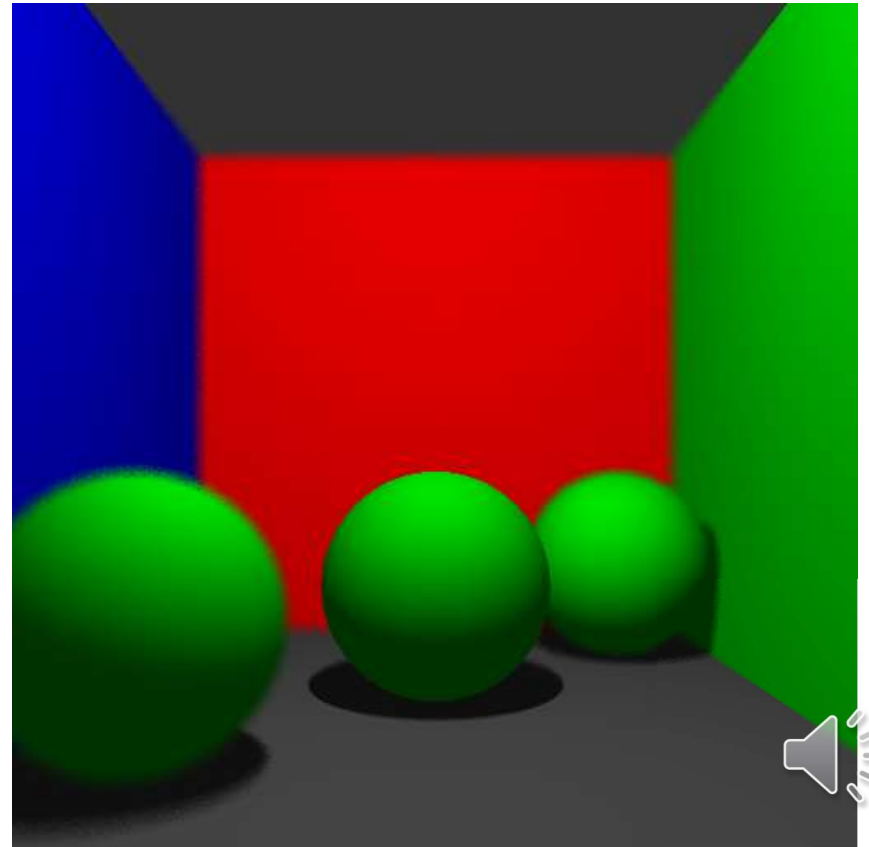
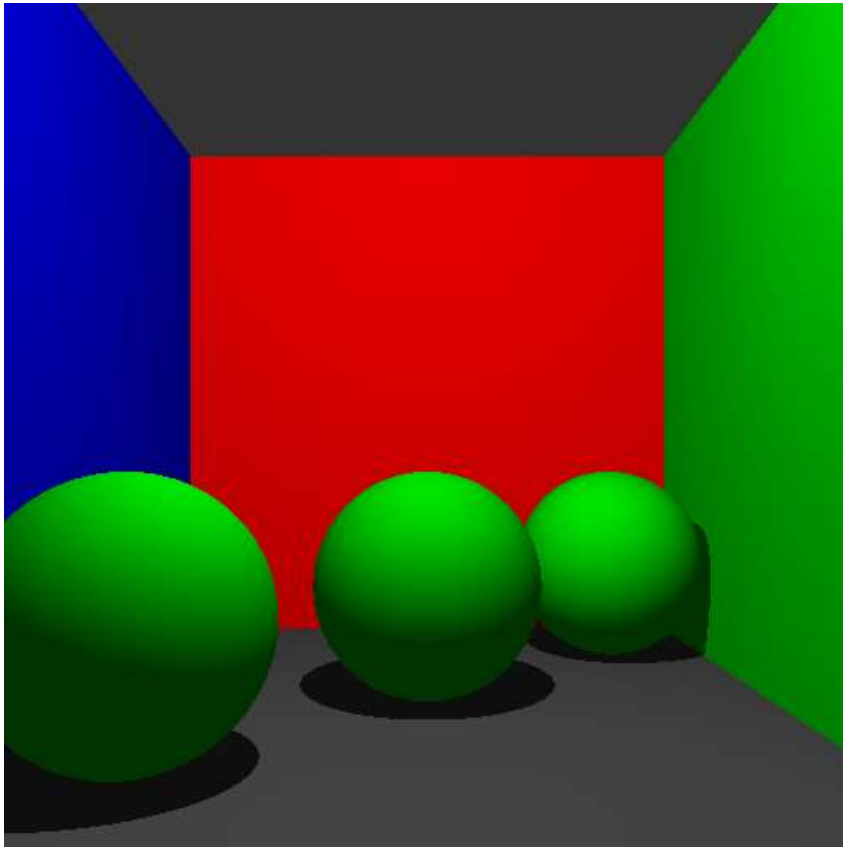




# Soft Shadows



# Depth of Field



# Extra Feature: Multi-Threading

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Rendering soft-shadows.lua with and without multi-threading (4 core 8 thread cpu):

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Without: 28s

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With: 10s

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# Final Scene

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- Texture mapped pillars and water
- Normal mapped water
- CSG Object
- Sculpted Walls, Doorway, and Platforms/  
Roofs created with CSG
- Reflective Sphere
- Refractive Sphere
- Phong Shaded Cat



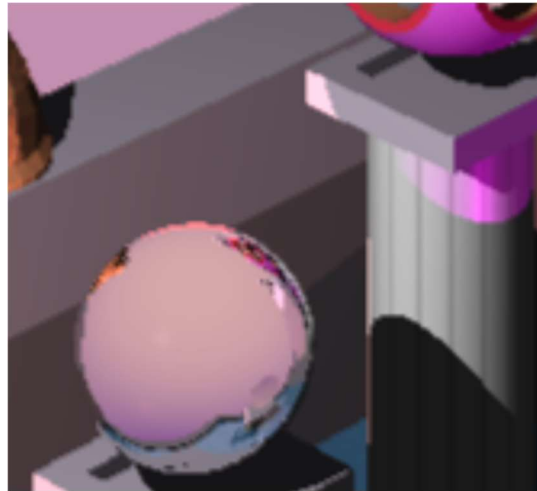
# Anti-Aliasing

Cat isn't Phong shaded here but this was down to the order I rendered these images in.

Disabled



Enabled





# Depth of Field



# Soft Shadows



# Best Image

- Anti-Aliasing
- Soft Shadows
- No Depth of Field
- Higher Resolution

