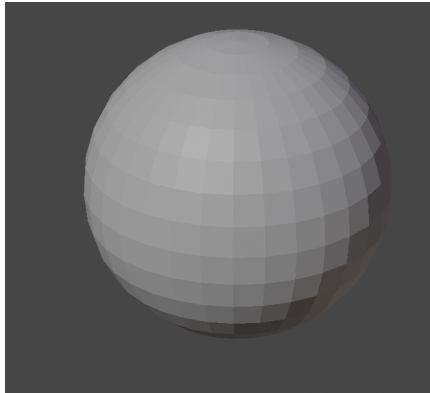
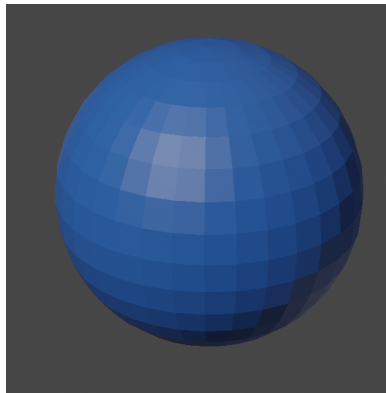


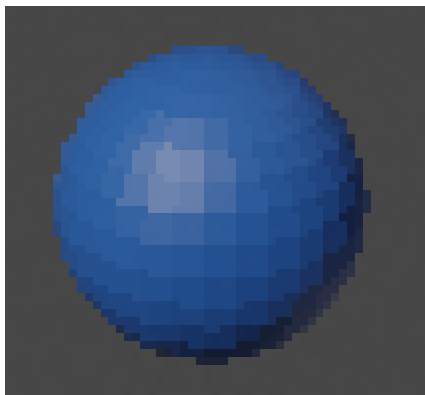
Checkpoint 1:



Checkpoint 2:



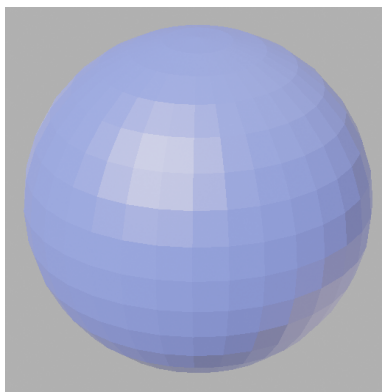
Checkpoint 3:



Checkpoint 4:

Changing the resolution makes the sphere less round. By reducing the number of pixels used for rendering the model becomes less of a realistic sphere. If you reduced it to 1x1 resolution you would have a single square pixel to represent a sphere. This effectively reduced the “realism” of the object and made the edges more blocky and jagged.

Checkpoint 5:



Making a gamma value higher will make shadows darker. A lower gamma makes them brighter. You can see in the image how the darkest visible portion of the sphere (bottom right) is now highlighted and much lighter grey instead of darker black.

1. How does light interact differently with different objects in real life? 3 examples.  
Different objects have different properties such as opacity, reflection and refraction values. A light can pass through clear water. The light will be refracted through the water and “bent”. Light can also be reflected off of the water onto other surfaces.
2. Why do objects appear to have different colors to our eyes?  
Light travels with different wavelengths and frequencies, making up a range of visible and invisible light. Colors are different wavelengths and frequencies within the spectrum of visible light.
3. What’s the advantage of using YUV color space?  
Compression artifacts can be masked or overcome.
4. How are the colors added differently for lights compared to paint? What does RGB equal in each case?  
Adding color to light involves adding colored filters (sometimes Red, Green, Blue (RGB)) for the light to pass through until the desired color is reached. Paint involves mixing different amounts of RGB paint in different quantities to reach the desired color.
5. Why are green screens green?  
Chrominance is used to select a specific hue of green (which is not widely used) to allow images to be displayed over those selected pixels.
6. Why is tone mapping needed for HDR images?  
Tone mapping makes HDR images look more realistic.
7. What’s the relationship between the wavelength of the light and the color of the light?  
E.g. why is 700 nm associated with red, 400 w/ purple.  
The light spectrum moves from ultraviolet (nonvisible) to visible as the wavelength increases and the frequency decreases. The first visible (from the direction of ultraviolet) is violet. As the wavelength increases from 380nm (violet) to 750nm (red) our visible color spectrum is defined.