Coms 331 **Mipmaps** **Fall 2007**

Homework 16

1. Draw a picture showing how the checkerboard texels would map to the pixels if the ratio were 2:1, two texels to one pixel.

2. Repeat the first exercise using a ratio of 3:1.

3. Repeat the first exercise using a ratio of 5:4.

4. If the original texture were 128×16, what would be the sizes of the smaller copies, down to 1×1?

5. Using the level-0 texture of Lecture 14 Slide 7, calculate the colors of the texels in the mipmaps of levels 1 - 3.

6. Use the program `Lecture 16 Demo 2.cpp` in this and the following exercise. In the function `init()`, comment out any one of the function calls to `glTexImage2D()`. What is the effect? Uncomment the call.

7. While the program is running, zoom out until all seven mipmap levels are visible. Then maximize the window. Are all seven levels still visible as before? Now reshape the window until it is very long and and narrow. Are all seven levels visible as before? Does the size and shape of the window seem to make a difference? Why?