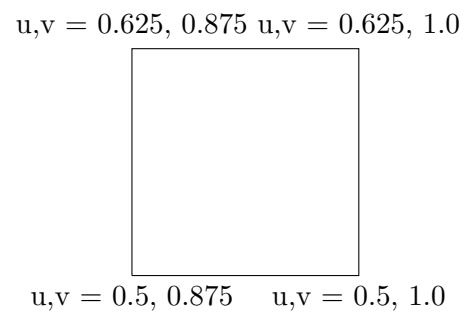# Homework 3 - Textures

1. **Considering the following chessboard texture with (u,v) coordinates:**

(0,1)   (1,1)

(0,0)   (1,0)
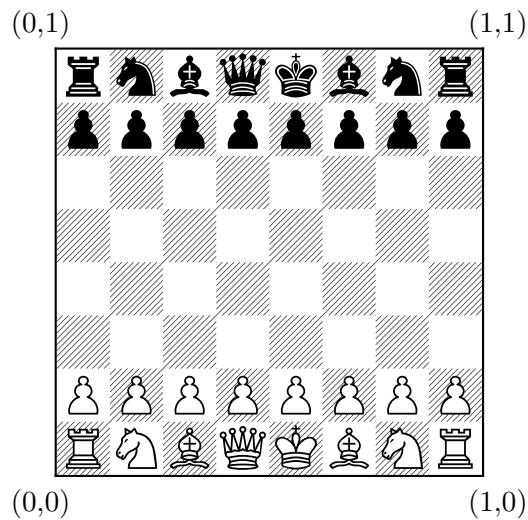
  (a) **Draw the approximate mapping on each quad if they were textured using the above image.**

(0.75, 0.25)   (0.875, 0.25)   u,v = 0.625, 0.875   u,v = 0.625, 1.0

(0.75, 0.125)   (0.875, 0.125)   u,v = 0.5, 0.875   u,v = 0.5, 1.0
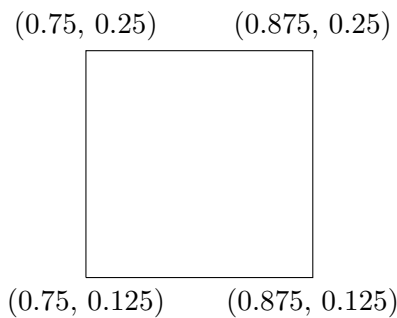
  (b) **Label the (u,v) texture coordinates for each of the 4 vertices that would result in the image below (just write them next to the corner of each square).**
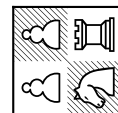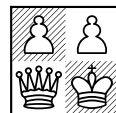
2. **Describe how and when one could use Spherical Parameterization to map a texture onto a 3D model.**

3. **In texture mapping, what is the difference between magnification and minification?**

4. **We textured a floor in our world and wish it looked like the left image, instead we got the right image, with speckled Moire patterns in the back and Jaggies in the front.**
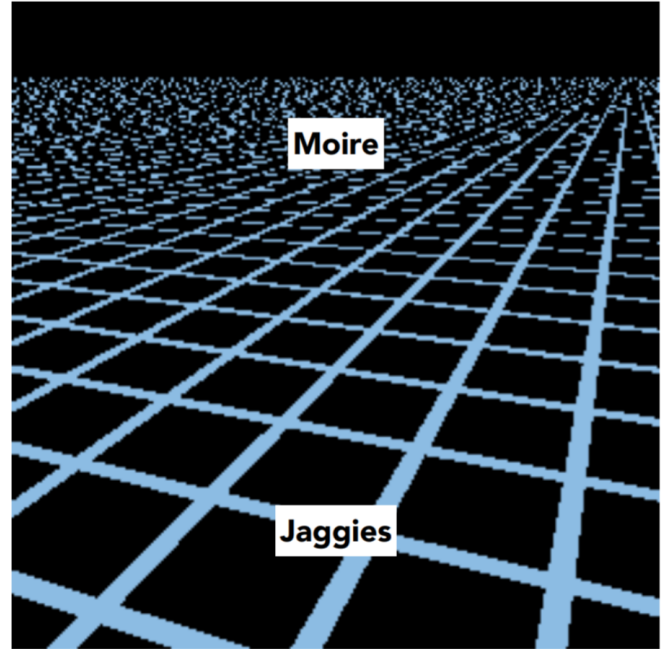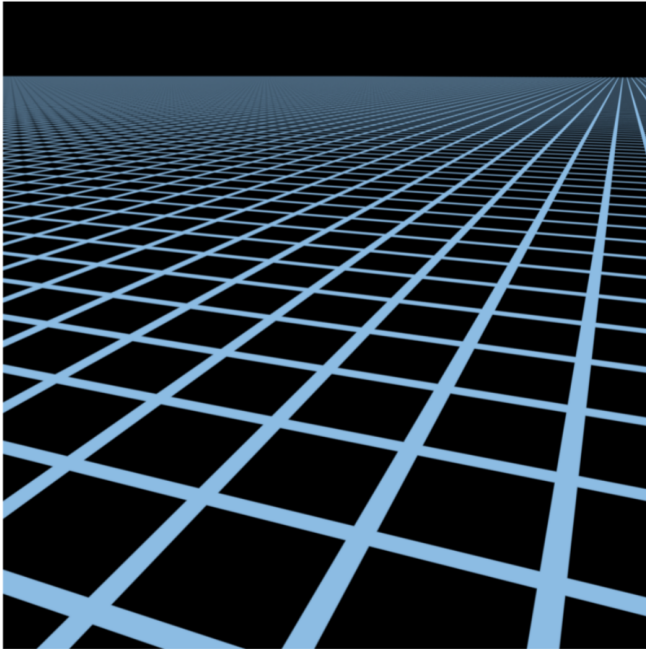
   (a) **Explain why these Moire patterns appear and how to fix them.**
   (b) **Explain why these Jaggies patterns appear and how to fix them.**

5. **What is the following fragment shader doing?**

```
varying vec2 uv;

uniform sampler2D tex;
uniform vec4 baseColor;

void main() {
    vec4 texColor = texture2D(tex, uv);
    gl_FragColor = 0.5 * texColor + 0.5 * baseColor;
}
```