

# Question Set 10

CS 420

## Chapter 15

1. In GLSL, what does `texture2D()` do, and what does a `sampler2D` variable represent?
2. Over what values do the x- and y-values of a texture coordinate range? For a given piece of geometry, *will* the x- and y-values of a texture coordinate range over these values?
3. Modify the following fragment shader to reflect the texture across the line  $x = 0.5$  and to set any fragments mapped to the upper right quarter of the texture to the color red.

```
#extension GL_EXT_gpu_shader4 : enable
uniform sampler2D uTexUnit;

varying vec2 vTexCoord;
varying vec3 vColor;

void main(void) {
    vec4 texColor = texture2D(uTexUnit, vTexCoord);

    gl_FragColor = texColor;
}
```

4. Describe normal mapping in terms of how it's done and what it accomplishes visually.