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Assignment 7 Written Response

1. Magnification occurs in texture mapping when a small part of a texture is mapped to a large part of the screen. Minification occurs when a large part of a texture is mapped to a small part of the screen. Magnification means the texel is larger than a single pixel and minification means the texel is smaller than a single pixel.
2. Mip-mapping is a response to minification. It is used because the resolution of a texel array is not needed when the texel array is larger than the screen space to which an object is projected. Mip-mapping involves creating texture arrays at smaller sizes that indicate how a texture should look at various distances from the viewer. The appropriate size, when the texel is approximately the size of a pixel at the given distance, will be used automatically.
3. An environment map is the mapping of textures from surrounding surfaces onto an object. The ray from the eye to the object is reflected, and this is the direction in which the surrounding textures are mapped. It is used to mimic highly reflective, or highly specular, surfaces such as mirrors.