MAT 494 – Computer Graphics

Review Sheet #1

- From Handouts/Online
  - Line Drawing algorithms (DDA, Bresenham)
  - Scan-converting filled polygons (brute force vs. edge table)
  - Clipping
  - Antialiasing
  - Graphics Hardware
  - Geometrical Transformations (2D, 3D, homogeneous, using matrices)
  - Geometrical Transformations (scale,rotation translation, matrices)
  - Geometrical Transformations (rigid Body, affine)
  - Geometrical Transformation Composition (matrices, OpenGL)
  - Projection (parallel, orthographic, perspective, homogeneous)
  - Viewing
- OpenGL
  - Matrices (modelview vs. projection).
  - Normal Vectors
  - zbuffer, depth test
  - Lighting (glLightfv, 8 light sources)
  - Lighting (ambient, diffuse, specular, position, spot direction, spot exponent, spot cut off ,constant attenuation, linear attenuation and quadratic attenuation)
  - Directional vs. Positional
  - The attenuation factor
  - Lighting Model (ambient, local viewer, two side)
  - Materials (front, back, ambient, diffuse, specular, shininess, emission)
  - vertex color (emission (+) global ambient scaled by the material (+) ambient diffuse and specular of all lights scaled by the material accounting for attenuation)
  - The global ambient component is: ambient(global) * ambient(material) in a component wise multiplication.