

Computer Graphics Comprehensive Exam Fall 2004

1. Explain the difference between Phong shading and Gouraud shading. What are their relative advantages and disadvantages? Provide the equations for each model.
2. Describe how the z-buffer hidden surface removal algorithm works. Compare the advantages and disadvantages of the z-buffer algorithm with the others hidden surface elimination algorithms.
3. Describe the Sutherland-Hodgman algorithm for polygon clipping.
4. Express, in terms of R, G, and B:
 - (a) the I of YIQ;
 - (b) the V of HSV;
 - (c) the L of HSL;Note that I, V, and L are not the same.
5. Describe the basic geometry of: (a) the perspective projection and, (b) the orthographic projection.