Computer Graphics Comprehensive Exam Spring 2004

1. What is specular reflection, and how is it usually modeled? .

2. What is the effect of applying the one-point perspective projection matrix to points whose z-coordinate is less than zero?

3. Vector scaling is multiplication of a vector by a scalar. Using vector scaling, give a formula for a vector s which is a weighted average of three vectors p, q and r.

4. Explain the difference between Phong shading and Gouraud shading. What are their relative advantages and disadvantages? Provide the equations for each model.

5. 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.