Self – Assessment Chapter 6

1. Without shading, computer graphics scenes look flat. In order to use a shading model, such as Gouraud shading or Phong shading, we must supply more information than only the vertices of our objects. What more is needed?

3. State and explain Lamberts Law using a diagram.

4. Using Lamberts Law, derive the equation for calculating approximations to the diffuse reflection term used in the Phong lighting model.

5. Describe the distinguishing features of ambient, point, spot and distant light sources.

6. The three-dimensional nature of objects can be shown by appropriate shading. Gradations or shades of colour give 2D images the appearance of being 3D. Describe the following three techniques to accomplish shading. In addition, discuss their advantages and disadvantages.

   a) Flat shading
   b) Gouraud shading
   c) Phong shading

7. Discuss the difference between a global and a local lighting model.

8. Describe the different parts of the Phong illumination model (*not* Phong shading). How do the different parts affect the result? Explain what the different constants represent in the equations.