

Although a simplification, there are two aspects to computer graphics: geometry and light. Answer the following questions about these topics.

- How are inner (dot) products used to define a geometry (distance and angles) on space?
- Why (or where) are homogeneous coordinates used in computer graphics?
- One commonly used transformation maps one rectangle (box in 3 dimensions) into another translated and scaled rectangle (box in 3 dimensions). Develop your own notation for describing rectangles and show how this transformation is completed.
- How are surface normals used in the classic illumination model for diffuse and specular reflection?
- In what space would the illumination model be evaluated? Why?
- How is linear interpolation used in Gouraud shading?
- How is *coherence* (or incremental updating) used to make linear interpolation fast?