**Graphics Questions**

1. What is aliasing in terms of computer graphics or image processing? Why does it occur? How can it be minimized? Show a visual example of aliasing.
2. Clipping algorithms are an important component of the creating a scene view. Explain why clipping is necessary. Choose an example of a boundary and a line and show how the endpoints of the clipped line can be calculated.
3. Pick a 4-element vector of your choice representing a 3-D point (for example [-10,4,20,1] ) and show the resulting new point for a 45,60 or 90 degree rotation about an axis of your choice. Be sure to show the transformation matrix used and specify your parameters (e.g, your original point, the angle and axis you picked). Note: you only need to show one transformation, if you pick one of the axes as the axis of rotation.
4. Find an "interesting" animation on the Web that is associated with OpenGL or another graphical package or library.  Provide the link to that animation and discuss how the animation was made. For example what specific tools were used, along with code snippets if available.
5. Consider a walkthrough and example for a 2D collision detection algorithm for allowing an object to stay within a rectangular bounding region. Using excel or a hand calculator, walk-through a 2D example by selecting your own velocity and starting positions. Feel free to modify the bounding rectangle as needed. Be sure to select a velocity vector and starting position that has not yet been selected. Post both your data sheet showing the time, delta t, vx,vy, and resulting x and y positions and the x,y positions visualizing the boundary limits.
6. Using the lighting examples from this week as examples, create a single 3D object, of your choice, centered in the 3D view. Create one or more light sources of your choice, and illuminate the object. Work to a lighting result that you are pleased with. Share the code and your screen capture of the lighted object. Explain how you achieved the results.