1) In terms of a sequence of transforms (translate, rotateX, rotateY, rotateZ), give the view transform from world space to camera space corresponding to a camera at world space point \((2, 5, 0)\) and looking straight at world space point \((10, 5, 0)\).

2) What are homogeneous (4D) coordinates, and how can you convert back and forth with regular 3D coordinates for a point?

3) Why do homogeneous coordinates make translation transforms more convenient? Make sure to include a matrix in your explanation.
4) Why do homogeneous coordinates make perspective transforms more convenient? Make sure to include a matrix in your explanation.

5) Sketch an example of a triangle where our rasterization algorithm is extremely inefficient.

6) Give pseudocode for the Z-Buffer algorithm.
7) Give pseudocode (with formulas) for testing if 2D point \((x, y)\) is inside a triangle with corners \((x_0, y_0)\), \((x_1, y_1)\), and \((x_2, y_2)\).

8) [Challenge] Consider the barycentric coordinate \(\alpha\) of a point \((x, y)\) in a triangle. In what direction does the gradient vector \(\nabla \alpha = (\partial \alpha / \partial x, \partial \alpha / \partial y)\) point? Illustrate with a sketch.