1. Use matrix multiplication to find the image of the vector \((-2, 1, 2)\) if it is rotated counterclockwise 30° about the x-axis.

2. Assume that \(v_1 = (2, -2, 0), v_2 = (6, 1, 4)\) and \(v_3 = (2, 0, 4)\) are vectors in \(\mathbb{R}^3\) that have their initial points at the origin. Determine whether the vectors lie in a plane.

Each problem is worth 5 pts.