Problem Set 4: Extra Problems

1. Find parametric equations for the curve of intersection of the surface $z = y^2 + 1$ and the plane $x + 2y + z = 2$.

2. A baseball is hit from a height of 3 feet with initial speed 120 feet per second and at an angle of 30 degrees above the horizontal. Find a vector-valued function describing the position of the ball t seconds after it is hit. To be a home run, the ball must clear a wall that is 385 feet away and 6 feet tall. Determine whether this is a home run.

3. A football is punted at an angle of 50 degrees with an initial speed of 55 mph. Compute the amount of time the football is in the air.