1. (5 pts.) Find the centroid of the triangular region bounded by the lines $y = 1$, $x = 3$, and $y = x$.

2. (5 pts.) Change the integral $\int_{0}^{1} \int_{0}^{\sqrt{1-x^2}} (1 + x^2 + y^2)^{-2} \, dy \, dx$ into an equivalent polar integral then evaluate the polar integral.