$Name$:_____

240 - Calculus III: Test 4 Extra Credit

DIRECTIONS: **Show all work!** There is a total of 5 points which will be added to Test 4.

1. (5 points) Find the center of mass of the solid of constant density $\rho(x, y, z) = k$ bounded by the graphs of the right circular cone $z = \sqrt{x^2 + y^2}$ and the horizontal plane $z = 4$.

   [Hint 1: Use polar coordinates to compute m and each M_{ij}]

   [Hint 2: Use symmetry to save work; i.e. the MOI on two of the planes may be equal]

   *Use back if necessary