Math 241, Sections BL1 and BL2

Quiz # 6

November 15, 2012

Solve both exercises. Show work to get credit.

1) [5pts.] Find the centroid $(\bar{x}, \bar{y}, \bar{z})$ of the solid E that lies above the cone $z = \sqrt{x^2 + y^2}$ and below the sphere $x^2 + y^2 + z^2 = 36$.

2) [5pts.] Evaluate $I = \int_C \vec{F} \cdot d\vec{r}$ where

$$\vec{F}(x, y) = \langle e^{3x} + x^2 y, e^{3y} - xy^2 \rangle,$$

and C is the circle $x^2 + y^2 = 9$ oriented clockwise.