Math 241, Sections BL1 and BL2

Quiz # 3

October 11, 2012

Solve both exercises. Show work to get credit.

1) [5pts.] Use Lagrange multipliers to find the point of the plane

$$x - y + z = 6$$

that is closest to the point $(2, 5, 4)$.

2) [5pts.] Find the length of the curve

$$\vec{r}(t) = \big\langle \cos(4t), \sin(4t), 4\ln(\cos t)\big\rangle, \quad 0 \le t \le \pi/4.$$