Math 211 Multivariable Calculus
Fall 2011

Problem Set # 3 (due Friday 16 September 2011)

Reading: CM 14.5 and 17.1-3

1. CM 14.5 Problems 42, 48, 54, 66.

2. CM 17.1 Exercises 10, 16, 22, 27.
Problems 52, 54, 56, 59, 62.

3. CM 17.1 Problem 65. Replace the initial paragraph of text with the following:

A line has parameterization $\gamma(t) = \vec{a} + t\vec{b}$ where $\vec{a}$ and $\vec{b}$ are (constant) non-zero vectors in $\mathbb{R}^3$ such that $\vec{b}$ is neither parallel nor perpendicular to $\vec{a}$. Let $\vec{r} = x\vec{i} + y\vec{j} + z\vec{k}$ be a general vector in $\mathbb{R}^3$. For each of the planes described in (a)-(c), pick the equation (i)-(ix) describing that plane. For example, the equation $\vec{n} \cdot (\vec{r} - \vec{P}) = 0$ describes the plane passing through $\vec{P}$ and normal to $\vec{n}$. Explain your choices.

4. CM 17.2 Exercise 10, 12, 14.
Problem 28, 29, 35.