Homework 5

The following are due on Friday, October 5:

§3.1 #32;[1]

§4.1 #12, 20, 25;

§4.2 #12, 13, 16.[2]

[1]This gives an example of a twice differentiable function whose mixed partials are not equal! This is related to the fact that $\theta = \theta + 2k\pi$ in $\mathbb{R}^2$, for integers k.

[2]If you are interested in differential geometry, you should attempt $16, 17, 20 - 23$. The vectors $\mathbf{T}$, $\mathbf{N}$, $\mathbf{B}$ are very important to the geometry of $\mathbb{R}^3$.