Math 14 Winter 2004

Calculus of Vector-valued Functions, Honors

Homework for the week of January 20 – January 23
Due date: Friday, January 30 at the end of your section's lecture

1. Prove that for any C^2 vector field $\mathbf{F}$, the divergence of its curl is zero, that is, $\operatorname{div}\operatorname{curl}\mathbf{F} = \nabla \cdot (\nabla \times \mathbf{F}) = 0$.

2. Exercise 6 p.282 from the textbook.

3. Exercise 16 p.294 from the textbook.

4. Exercise 26 p.312 from the textbook. Justify your answer.

5. Exercise 30 p.312 from the textbook.

6. Review exercise 16 p.314 from the textbook. Justify your answer.

7. Review exercise 24 p.314 from the textbook.