MATH 201, Spring 2014
Exam 2 Topics

Exam 2 will take place during the first half of class on Monday, March 31, 2014. (After a short break, the second half of the class period will be new material from Section 11.7.) There will be a Question and Answer session during the second half of class on Wednesday, March 26, 2014.

The exam covers all material covered since the previous exam, including

- Sections 10.7–10.9 (not including Planetary Motion at the end of 10.9)
- Sections 11.1–11.6

I highly suggest that you review Webwork assignments 4–6. It is possible to return to an assignment and see the correct answers and solutions.

I especially recommend the Chapter Reviews given for Chapter 10 (pp. 589–592 (1st Ed) or pp. 616–620 (2nd Ed)) and Chapter 11 (pp. 661–664 (1st Ed) or pp. 691–694 (2nd Ed)).

In addition to computational questions, there will be questions that ask you to understand concepts from the course, possibly including, and not limited to:

- Definition of derivative of a vector valued function along with its geometrical interpretation (p. 565 (1st Ed) or p. 590–591 (2nd Ed))
- Prove that if $||\vec{\mathbf{r}}(t)||$ is constant, then $\vec{\mathbf{r}}(t)$ and $\vec{\mathbf{r}}'(t)$ are orthogonal (p. 568 (1st Ed) or p. 593 (2nd Ed))
- The relationship between $\vec{\mathbf{r}}$, $\vec{\mathbf{r}}'$, $\vec{\mathbf{r}}''$, $\vec{\mathbf{T}}$, $\vec{\mathbf{N}}$, $\vec{\mathbf{B}}$, κ.
- Show non-existence of limits by checking paths.
- Definition of continuity (p. 607 (1st Ed) or p. 635 (2nd Ed)) and directional derivative (p. 636 (1st Ed) or p. 665 (2nd Ed)) for functions of two or more variables
- If f is differentiable at P_0, then $\nabla f(P_0)$ points in the direction in which f increases the most rapidly (p. 640 (1st Ed) or p. 669 (2nd Ed))