Study Guide for Midterm 2

Chap. 9- Chap. 10

- Sec. 9.2:
  The calculus (limit, differentiation, integration) of vector-valued functions.
  Examples: 1-8.   Practice Problems:1, 7, 13, 23.

- Sec. 9.3:
  Application problems.
  Examples: 1-7.   Practice Problems:1, 7, 15, 41.

- Sec. 9.4:
  Find the curvature of a curve.
  Examples: 1-6.   Practice Problems: 1, 15, 39, 49.

- Sec. 9.5:
  Find the tangent and normal vectors of a vector function.
  Examples: 1-6.   Practice Problems: 1, 9, 13, 21, 25.

- Sec. 10.2:
  Definition of the limit and continuity of functions of several variables, use polar coordinates
  to find the limit.
  Examples: 2-8.   Practice Problems: 1, 7, 23, 27, 47, 53.

- Sec. 10.3:
  Calculate the partial derivatives of a function.
  Examples: 1-7.   Practice Problems: 1, 9, 45, 63.

- Sec. 10.4:
  Find the tangent plane and linear approximation of a function.
  Examples: 1-3, 5.   Practice Problems: 1, 7, 23, 31.

- Sec. 10.5:
  Chain Rule.
  Examples: 1-4.   Practice Problems: 5, 17, 19.

- Sec. 10.6:
  Definition of the gradient. Directional derivatives.
  Examples: 2-6.   Practice Problems: 1, 7, 11, 17, 21.

- Sec. 10.7:
  Find the critical points and extrema of functions of seceral variables.
  Examples: 2, 3, 4, 6.   Practice Problems: 1, 7, 33.

- Sec. 10.8:
  Use Lagrange Multipliers to solve the constrained optimization problems.
  Examples: 2, 3, 4.   Practice Problems: 1, 9, 17, 37.